NATIONAL PETROLEUM NEWS

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Miskell Elected President at Meeting Of Western Petroleum Refiners

By J. C. Chatfield
N. P. N. STAFF WRITER

FORT WORTH, March 4

P M. MISKELL, general manager of the Empire Refineries, Inc., was unanimously elected president of the Western Petroleum Refiners Association at the closing session of the annual convention here today. The convention was the most largely attended and one of the most successful ever held by the organization.

C. L. Henderson, vice-president of the Vickers Petroleum Co., Wichita, was elected a vice-president. Roy B. Jones, president of the Panhandle Refining Co., Wichita Falls, and George D. Locke, vice-president of the Barnsdall Refining Co., Chicago, were re-elected as vice-presidents.

Howard Bennette, managing director, was selected by the board of directors to remain in active charge of its work for a third term. New members of the board of directors elected were: E. D. Levy, president of the Pierce Petroleum Corp.; C. E. Gerteis, superintendent of the White Star Refining Co.; E. H. Eddleman, vice-president of the Texhoma Oil & Refining Co.; F. A. Pielsticker, vice-president of the Skelly Oil Co.; and J. E. Shatford, vice-president of the Ouachita Valley Refining Co.

Association's Program

Outstanding suggestions by speakers and officers of the association which will be put into effect during the coming year or made a subject of study are:

1. Continued carefulness of operation so that inventories of finished products shall bear a proper relationship to current demand. This feature of the annual report of retiring president, F. A. Pielsticker, apparently spoke the thought which is uppermost in the minds of refiners.

2. A broader viewpoint of the railroad rate structure on the part of intensely competing groups within the Mid-Continent. While no definite action was taken by the association on rate matters it was apparent at the meeting of traffic managers and in general sessions that refiners are realizing the necessity of submerging minor differences in the greater problems of the entire district.

3. A policy of enlarging investments in refining by perfecting methods rather than by enlarging capacity was conceded to be one which will bring greater net profits in the future.

4. Continuation of a vigorous policy on the part of the association in combating unequitable schemes of taxation such as that proposed in Oklahoma at the moment to supplant the gross production tax.

5. It was voted to establish a clearing house at association headquarters to assist members in disposing of excess tank cars on a temporary basis and to aid other members in meeting peak demands by obtaining cars from others who may have a surplus at the time.

Plenty of Entertainment

Entertainment of the refiners by business men of Fort Worth led by W. M. Harrison, president of the Star Refining & Producing Co., and Louis A. Greene of the Radio Petroleum Co. was on a par with that accorded the American Petroleum Institute here a little over a year ago. The spacious grounds of one of the city's most beautiful homes was the scene of a real Texas barbecue on the evening of the first day. The barbecue was followed by a boxing and musical program which kept the visitors from scattering until late in the evening. The women were entertained each day.

Although the traffic managers held a spirited group session Tuesday morning which was reported in last week's issue of this publication, the convention proper opened in the afternoon when Mr. Pielsticker gave his annual report which contained a scholarly estimate of the current position of the Mid-Continent refiner and a much applauded recommendation of future action.

Advocates Futures Market

Establishment of a futures market in oil similar to that in wheat and other basis commodities was advocated at the same session by A. B. Eisenhower of the Commerce Trust Co., Kansas City, who followed Fayette B. Dow, Washington Counsel, whose paper is reproduced in this issue. Mr. Eisenhower contended that a futures market would do much to stabilize crude prices although admitting that discovery of new fields might be felt even more quickly than at the present time.

"Disorganization of the petroleum price structure need not be feared except as it may result from over-production," Mr. Eisenhower said. "Oil is a commodity which has no serious competition except that in a small degree coal may come in competition with one of its component parts. The possibility of the discovery of substitutes is remote.

Proposes Warehousing

Mr. Eisenhower announced that a warehouse company in California is now looking into the feasibility of entering the Mid-Continent field in the business of warehousing oil for others. The company plans to buy or lease storage in Oklahoma, Kansas and Texas at convenient points. It would run oil to storage and issue negotiable warehouse receipts. These receipts could then be offered to banks as collateral for loans.

Plan for Weighing Credits

Taking the refiners into his confidence, Mr. Eisenhower told them of the Morgan plan for weighing credits which is followed more or less closely by a large number of important banks. The Morgan plan gives 20 per cent weight to the nature of the business seeking credit, 40

per cent to the moral side of the risk and 40 per cent to the financial stability of the applicant.

It was admitted by the banker that two failings of men in his business in making loans which cause losses are (1) size of the account on the books of the institution or desire to acquire a sizeable account, and (2) to personal contacts. He said, "It may seem unbelievable when I tell you that a bank's largest losses are due to personal contacts. One becomes sold on the personality of the individual to the point where the financial elements of the transaction are forgotten." He told of one bank which now has a committee which finally passes on loans and never sees the applicant.

Much stress was laid by Mr. Eisenhower on financial statements in making applications for loans. He indicated to the refiners that the best way to get money from a bank is to present a statement which is fully frank and supported by conclusive evidence. He stated that his institution would rather lend money to a company which fully showed a rather poor financial condition in detail than to another company with a fine general statement without detailed information.

Taking refiners behind the scenes in a bank Mr. Eisenhower revealed the scrutiny which is given financial statements. He stated that his bank has compiled statistics showing the normal condition of a large number of companies in every line of business. When a refiner brings in a statement it is reduced to a percentage basis and the percentages are checked with percentages of the combined statements of other refiners. If it is either too good or too bad it is a matter which must be investigated before credit is allowed.

For the guidance of its members the banker suggested that the refiners association gather financial statements from its members and after consolidating them with other companies which are fairly comparable, reduce the combined information to percentages and return the information to members. He told how one association in another industry is doing this so that any executive may compare his own financial condition with that of other companies.

Such a system of checking would be facilitated by uniform accounting methods such as are being worked out by the American Petroleum Institute as a part of its large program of standardization. With a uniform method of accounting a member might send his figures to the association in percentages. He would receive back figures in percentages for the group average and be able to pick flaws in his own condition and remedy the situation by going to the seat of the trouble.

The retiring and incoming presidents of the W. P. R. A., left F. A. Pielstriker, vice president, Skelly Oil Co., president of W. P. R. A. last year, right, P. M. Miskell, general manager Empire Refineries Inc., elected president at convention.

Arguing against the thought that strong members might object on the ground that the system would help weaker competitors to clean house and thus become stronger Mr. Eisenhower suggested that a profitable industry is a stable industry. It is one in which operators know their costs and hence do not enter disastrous price wars in ignorance. He declared that an industry of strong units is strong while a disorganized industry is always weak.

With the exception of two addresses the second day's program was entirely taken up with technical papers. Isaiah Hale, safety supervisor of the Santa Fe railroad, who spoke on "The Mind as a Factor in Industrial Accidents," and Edward P. Bailey, former president of the American Oil Burner Association, who spoke on "What Domestic and Industrial Oil Burning Means to the Refiner," were the exceptions.

Mr. Bailey saw no cause for alarm to his industry from a possible shortage of oil in the near future. He quoted extensively from addresses made before the Federal Oil Conservation Board at Washington to show that current sentiment of leaders of the industry is that there will be plenty of oil. To this he added the shale oil industry as a source for fuel oil for home and industrial use.

To picture the future possibilities of the oil burner manufacturers and the petroleum industry Mr. Bailey stated there are 25 million homes in the United States of which only about five million need no heating plant. If the number of homes is cut in half to arrive at a number which might possibly be sold oil burners there would be more than 10 million possible users of oil for heat. A recent survey at Washington, D. C., showed that burners there consumed an average of 60 barrels of oil per year. On the basis of 60 barrels per year the possible 10 million installations would consume 600,000,000 barrels of oil or nearly as much as the country now produces of crude oil.

Mr. Bailey told the refiners that the oil burner manufacturers are working hard to design burners which will handle the type of heavy oils which refiners want to supply, the kind which will contain little or no gasoline even when cracked. He predicted that such burners will be developed for home use and showed that they are now successful in burning very heavy oils with a high flash point in industrial plants.

Refiners were urged to prepare specifications of a type of oil which can be made at all plants. With such specifications Mr. Bailey declared that a burner could be designed for the oil and sold in all parts of the country. At present oils vary greatly in different localities.

Reviewing the advance in automotive

construction Mr. Bailey told refiners that present cars consume only half the gasoline per mile that cars did in 1919 and that in another seven years even further economies would be made. He predicted that the consumption of gasoline would not advance as much in line with the increase in number of motor cars. This idea was advanced to show the refiners that they cannot expect to do without fuel oil business.

Paper on Evaporation

The technical program included a paper on "Decreasing Refinery Evaporation Losses of Gasoline" by Ludwig Schmidt of the Bureau of Mines which caused a lively discussion among the refinery operators. Wayne Rice, superintendent of the Marland Refining Co. plant, suggested how to test welded tanks for leaks before accepting them from contractors. He said that at his plant a pressure of air was put in the tanks amounting to about 2 inches of water. All seams were then painted with soapy water. Ivory soap and distilled water are used.

It was said that when burlap coverings were used over tanks to limit evaporation it had been found that the tanks and bolts or rivets rusted away rapidly. On some tanks it was found that rivet heads were practically gone at the end of one year. This is prevented by the use of heavy asphaltic paint.

Other technical papers presented were "Specifications of Petroleum Products" by Dr. A. P. Bjerregaard, petroleum technologist of the Empire Refineries, Inc., which is reproduced in this issue; "Contributing Factors to Corrosion with Special Reference to Sulphur," by Dr. C. K. Francis; and "What Does Insulation Mean to the Refiner," by L. E. Cover, engineer for the Armstrong Cork & Insulation Co.

J. D. Collett, president of the Texas division of the Mid-Continent Oil & Gas Association, was toastmaster at the annual banquet. Sidney Samuels, a Fort Worth attorney, was the principal speaker.

Retiring President Pielsticker was given a beautiful silver coffee set by the members of the association at the banquet as an appreciation for his services during the last two years. The presentation was made by Pat Malloy, president of the Constant Refining Co., Tulsa.

At breakfast on the closing day Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, spoke about the proposed oil production taxes in Oklahoma.

TULSA, March 6.—Announcement has been made that E. C. Prator, who was to have become associated with the Kendrick Oil Co. on March 1, will remain with the Imperial Oil Marketing & Refinery Co. as assistant sales manager.

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At the Refiners' Convention. Left to right, W. G. Skelly, president, Skelly Oil Co., W. R. Boyd, assistant secretary, American Petroleum Institute, W. N. Davis, president, Mid-Continent Oil & Gas Association, and W. M. Harrison, president, Star Refining & Producing Co., Fort Worth, a leader in entertaining the refiners at the convention.

Newly Elected President of W. P. R. A. Is Veteran Oklahoma Refiner

FORT WORTH, March 8

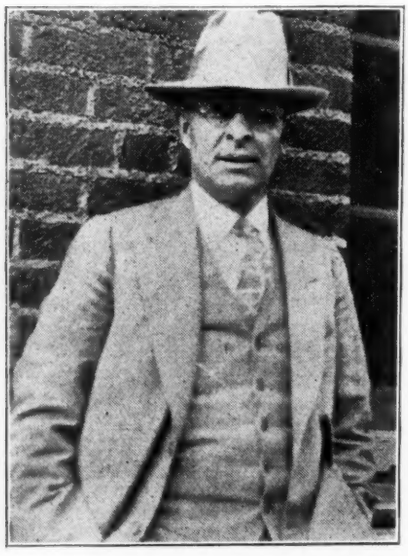
"PAT" MISKELL, newly elected president of the Western Petroleum Refiners Association, will bring to that position a thorough knowledge of the problems of manufacturers of the southwest. He has been the managing head of a growing refining company in Oklahoma for more than 10 years and has a background of another decade of experience in the oil business in Ohio and Pennsylvania.

Mr. Miskell's business experience has not been limited to the petroleum industry. When he was little more than a child he started out with the idea of becoming a railroad man. He got a job carrying messages for the Pennsylvania railroad. In a period of 12 years he worked up to a position as assistant agent.

When an opportunity came for him to enter a bank he did so and spent the next five years of his life in studying finance in a practical way.

While his banking experience undoubtedly has had a large influence in enabling Mr. Miskell to manage a large manufacturing corporation, his railroad work likewise gave him a keen interest in transportation. During the entire period of his service as a refinery executive Mr. Miskell has realized that one of the major problems of the Mid-Continent refiner has been that of keeping his natural trade territory open through the medium of proper freight rates.

At the group meeting of refinery traffic managers at the present convention Mr. Miskell was present. He was one of the few executives in the meeting



—N. P. N. Staff Photo

H. W. Camp, general superintendent Empire Refineries Inc., Tulsa, snapped at W. P. R. A. convention.

—N. P. N. Staff Photo

Palmer Hughes, salesmanager Simms Oil Co., Dallas, talking with W. A. Tracy, Sinclair Refining Co.

who took an active part in the discussions.

As a director of the association and vice president he was frequently urged an aggressive rate policy and his company has supported rate cases of the first magnitude.

In 1905 Mr. Miskell associated himself with the Barnsdall interests in Ohio and Pennsylvania. He worked with young Cleve. Barnsdall in the laying of oil and gas pipe lines under contract and on the death of his father aided in settling the estate. Later he was associated with the Barnsdall interests in oil and gas production until 1915 when he came to the Mid-Continent field to assume the management of the American Refining Co.'s plant at Okmulgee.

A year later the American properties were bought by the Cities Service Oil Co. and Mr. Miskell was made general manager of the refining division then set up. Since that time the company has acquired or built three additional refineries which are located at Ponca City and Cushing, Okla., and Gainesville, Tex. The four plants have a combined capacity of 20,000 barrels of crude per day.

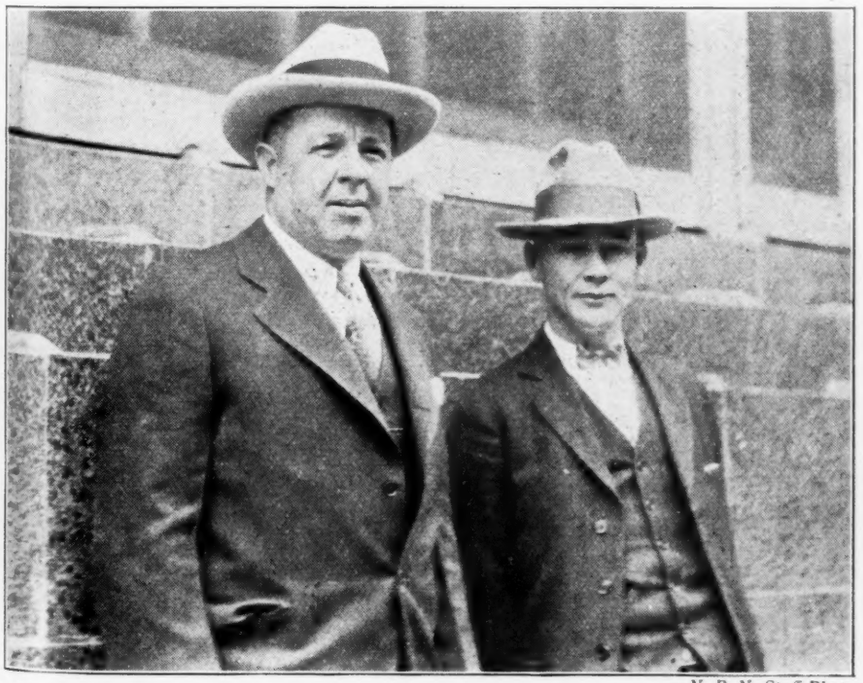
No changes will be made in the policies of the refiners association during his administration Mr. Miskell announced after his election. The same managing personnel will be retained under the leadership of Howard Bennette, managing director.

Mr. Miskell paid a tribute to the ability of Mr. Bennette as managing director, declaring that much of the recent success of the organization has been due to his efforts. "Through the statistical department the association has kept its members informed constantly of the economic position of the field in relation to the entire industry," he said.

"This has been an important factor in aiding refiners to weigh their own individual situation. Due to intelligent operations, Mid-Continent refiners during the past year have kept their gasoline stocks in terms of days supply far below the level of the country as a whole."

—N. P. N. Staff Photo

Dr. C. K. Francis, left and C. L. Henderson, Vickers Petroleum Co., Wichita, Kan., elected a vice president of W. P. R. A.



—N. P. N. Staff Photo

J. M. Bradshaw, Union Oil Products Co., Wichita Falls, and D. B. Dawson, general manager Amarillo Refining Co.

"Bob" Sharpe To Move To Chicago

R. J. Sharpe, general sales manager General American Tank Car Co.

FORT WORTH, March 6.—Dave Copeland, general manager of the General American Tank Car Corp., announced at the convention of the Western Petroleum Refiners Association, that R. J. "Bob" Sharpe, Tulsa representative of the company, has been made general sales manager.

Mr. Sharpe will move his headquarters to Chicago within the next few weeks to take up his larger work. He will be succeeded at the Tulsa office by J. V. O'Neil, who is now at Chicago.

Directory of Newly Elected Officers and Directors

President: P. M. Miskell, manager, Empire Refineries Inc., Tulsa.

Vice Presidents: Roy B. Jones, president, Panhandle Refining Co., Wichita Falls; George D. Locke, vice-president, Barnsdall Refining Co., Chicago. C. L. Henderson, vice president, Vickers Petroleum Co., Wichita, Kan.

Managing Director: Howard Bennette, Tulsa.

Board of Directors

H. T. Ashton, vice president, Lubrite Refining Co., St. Louis.

V. E. Bolene, president, Bolene Refining Co., Enid, Okla.

D. E. Buchanan, vice president, Chestnut & Smith Corp., Tulsa.

W. K. Campbell, president, Western Oil Corp., Tulsa.

S. C. Collins, vice president, Marland Refining Co., Ponca City, Okla.

L. R. Crawford, vice president, Producers & Refiners Corp., Denver.

A. L. Derby, president, Derby Oil Co., Wichita, Kan.

E. H. Eddleman, vice president, Texhoma Oil & Refining Co., Wichita Falls.

A. F. Garrett, assist. general manager, Tidal Refining Co., Tulsa.

C. E. Gerteis, superintendent, White Star Refining Co., Detroit, Mich.

E. W. Goebel, general manager, Manhattan Oil Co., Kansas City.

J. L. Gray, vice president, Shaffer Oil & Refining Co., Tulsa.

R. R. Irwin, vice president, White Eagle Oil & Refining Co., Kansas City.

Elliott Jones, president, Elliott Jones & Co., San Antonio.

A. E. Landsittel, sales manager, Globe Oil & Refining Co., Tulsa.

E. D. Levy, president, Pierce Petroleum Corp., St. Louis.

L. B. McCammon, vice president, Transcontinental Oil Co., Tulsa.

C. L. Mayhall, vice president, Imperial Refining Co., Tulsa.

J. H. Miller, president, Miller Petroleum Co., Kansas City.

D. W. Moffitt, vice-president, Mid Continent Petroleum Corp., Tulsa.

C. C. Peppers, president, Peppers Gasoline Co., Enid, Okla.

F. A. Pielsticker, vice president, Skelly Oil Co., Eldorado, Kan.

J. E. Shatford, president, Ouachita Valley Refining Co., Eldorado, Ark.

H. A. Trower, sales manager, Phillips Petroleum Co., Bartlesville, Okla.

J. L. Walsh, sales manager, Continental Oil Co., Kansas City.

G. G. Woodruff, sales manager, Roxana Petroleum Corp., St. Louis.

Executive Committee

P. M. Miskell, Roy B. Jones, George D. Locke, C. L. Henderson, H. T. Ashton, D. E. Buchanan, S. C. Collins, E. W. Goebel, Elliott Jones, and J. H. Miller.

Petroleum Safety Council to Meet At Houston March 19 and 20

TULSA, March 8.

THE program for the second annual convention of the Petroleum Safety Council of the Mid-Continent Oil & Gas Association which will be held at Houston on March 19 and 20, was announced today by H. W. Boggess, director of safety for the Sinclair companies and president of the Safety Council. The two-day convention is to be filled with discussions of accident prevention.

Invitations have been sent by Ray E. Miller, director, to every refining and producing firm in the southwest. Companies are being asked to send plant superintendents, safety directors as well as executives.

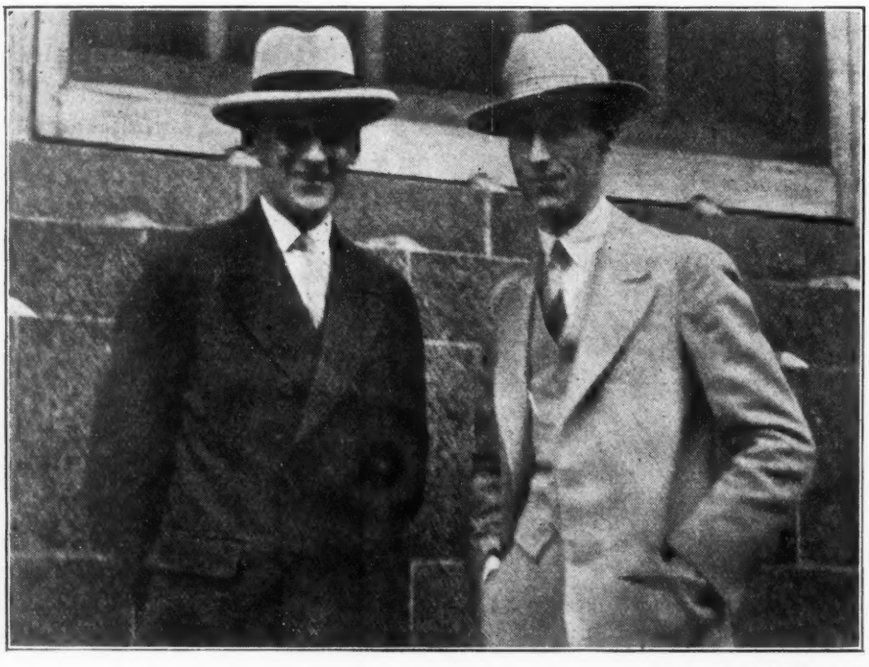
W. S. Farish, president of the American Petroleum Institute, will be one of the principal speakers at the opening session on the morning of March 19. He has chosen the subject "Safety, a Factor in Modern Industry." D. J. Wallace, safety director for the Humble Oil & Refining Co., will speak at the opening meeting and reports will be made by President Boggess, Harry H. Smith, treasurer, and Director Miller.

At the afternoon session W. H. Cameron, managing director of the National Safety Council, Chicago, will speak on "The Safety of a Nation's Workers." C. L. Swim, safety director for the Skelly Oil Co. will speak on "Methods a Producing Company May Employ."

"The Value of First Aid Training to Employees," will be discussed by E. D. Murphy, safety engineer for the Mid-Continent Petroleum Corp., Tulsa. Mr. Murphy will have a good example to offer since the lives of two workers at the Mid-Continent refinery have been saved during the past year as the result of the application of artificial respiration. This was done by employees at the plant who had received training on a first aid team.

Statistics of accidents will be discussed by director Miller followed by F. A. Pielsticker, vice president of the Skelly Oil Co., who will talk on the value of foremen's meetings. Ralph Banister, safety engineer for the Gypsy

(Continued on page 33



—N. P. N. Staff Photo

M. E. Foster, Phillips Petroleum Co., Bartlesville and A. T. Scherer, Sinclair Refining Co., Tulsa.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refiners Cut Crude Runs by 5000 Barrels a Day

TULSA, March 8

A DRASTIC cut in crude runs at 124 Mid-Continent refineries was made during the week ending March 5, according to reports gathered by National Petroleum News. Daily average crude runs for the week were 227,809 barrels as compared with 249,177 barrels during the last week of February, a reduction of nearly 22,000 barrels per day.

Every group of refiners reports reductions, although Oklahoma refiners led the list with a reduction of 12,000 barrels per day, Kansas plants cut 2000 barrels and Texas refiners seven thousand barrels. In north Louisiana and Arkansas runs were increased 400 barrels per day. Total runs at all plants were 5000 barrels per day less than on the corresponding week a year ago.

Stocks of all heavy oils were reduced as usual. Stove distillate stocks were reduced 660,000 gallons to a new low level of 3,111,112 gallons. Gas oil stocks were cut nearly a million gallons to 50,750,452 gallons. Shipments of fuel oil continued to be quite heavy during the week running up 330,000 gallons over the last week in February to 32,335,991 gallons. Production was reduced more than a million gallons due to the smaller crude runs to 24,703,225 gallons and stocks were cut 7,600,000 gallons to 78,166,217 gallons.

Summary for the Month

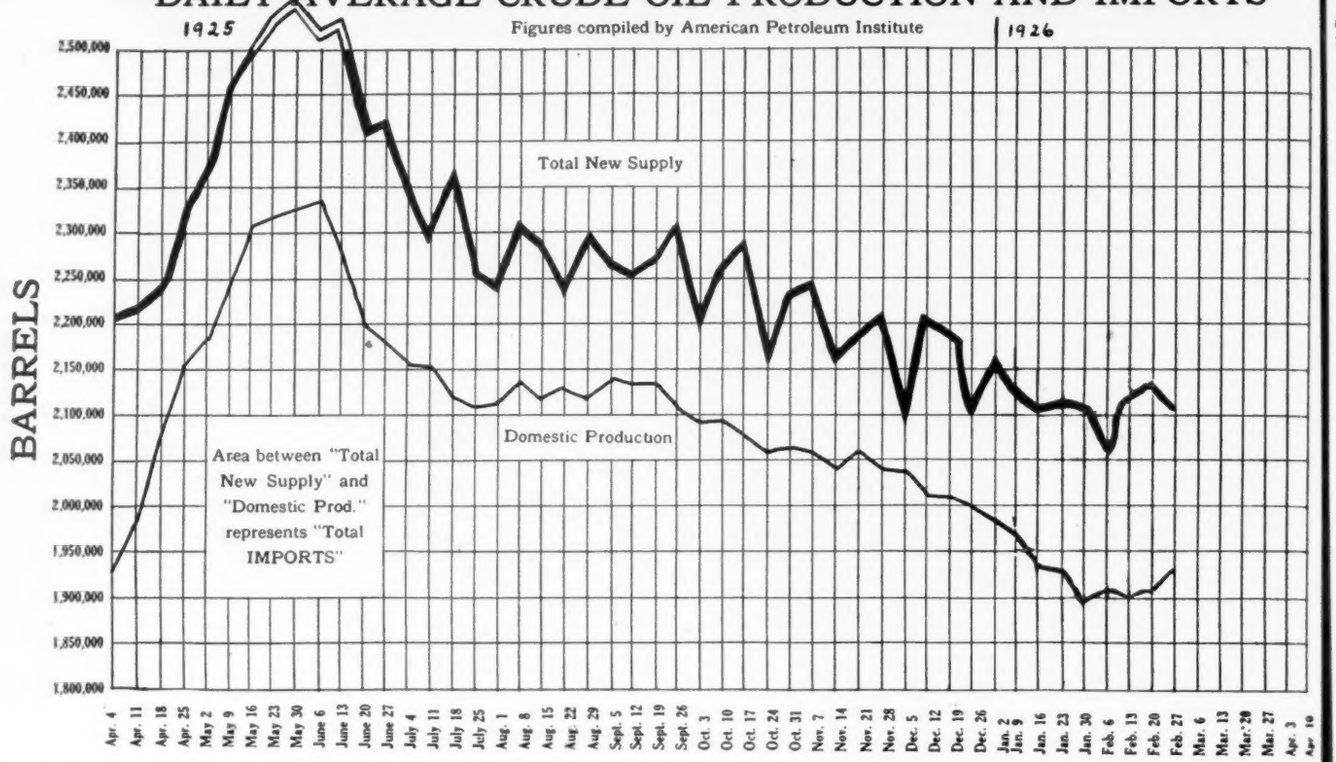
Production and shipments, all reporting refineries, for four weeks ended March 5. Change in stocks figured from Feb. 5.

	Gallons
Gasoline	
Production	121,173,234
Shipments	109,832,207
Net change in stocks	+11,341,027
Ratio sales to production	90.6%
Kerosene	
Production	19,683,818
Shipments	19,770,294
Net change in stocks	—86,476
Ratio sales to production	100.4%
Stove Distillate	
Production	6,110,814
Shipments	10,553,712
Net change in stocks	—4,442,898
Ratio sales to production	172.7%
Gas Oil	
Production	22,091,463
Shipments	20,099,253
Net change in stocks	+1,992,210
Ratio sales to production	91.0%
Fuel Oil	
Production	104,489,327
Shipments	128,045,524
Net change in stocks	—23,556,197
Ratio sales to production	122.5%

Mid-Continent Refinery Operations Week Ended March 5 (By Fast Wire)

	Kansas	%Change Previous Week	Oklahoma	%Change Previous Week	No. & Cent. Texas	%Change Previous Week	No. La.-Ark.	%Change Previous Week	Total	%Change Previous Week	Totals Week Ended Feb. 5
Plants Reporting	23		46		41		14		124		124
Daily Cap. (Bbls.)	98,200		165,900		144,300		51,700		460,100		460,100
Da. Av. Crude Runs	45,296	— 3.8	87,482	—12.5	57,478	—11.6	37,553	+ 1.2	227,809	— 8.6	230,220
Da. Av. Other Oils	3,753	+ 4.9	3,091	+758.6	7,034	+239.2	709	—28.2	14,587	+108.4	6,620
GASOLINE—Gallons											
Stocks Feb. 26	13,692,610		57,056,995		17,089,263		5,590,525		93,429,393		83,156,281
Prod. 2-26 to 3-5	7,709,090	+ 4.6	13,395,583	— 5.0	6,473,220	— 6.4	2,663,538	— 0.6	30,241,431	— 2.7	27,393,489
Ship. 2-26 to 3-5	6,634,148	+ 6.2	11,926,418	+ 7.6	6,385,664	— 8.9	2,424,514	+ 3.7	27,370,744	+ 2.6	25,590,717
Stocks March 5	14,767,552	+ 7.8	58,536,160	+ 2.6	17,176,819	+ 0.5	5,829,549	+ 4.3	96,300,080	+ 3.1	84,959,053
Ratio Sales to Prod.	86.1%		89.0%		98.6%		91.0%		90.5%		93.4%
KEROSENE—Gallons											
Stocks Feb. 26	1,180,499		5,180,226		1,308,968		365,484		8,035,177		8,367,157
Prod. 2-26 to 3-5	1,014,434	— 0.6	2,199,835	+ 1.2	1,404,819	+27.0	527,561	+16.8	5,146,649	+ 8.3	4,711,209
Ship. 2-26 to 3-5	811,488	—18.7	2,515,262	+61.4	1,302,491	+10.7	424,923	+ 7.4	5,054,164	+22.4	4,864,228
Stocks March 5	1,383,445	+17.2	4,864,799	— 6.1	1,411,296	+ 7.8	468,122	+28.1	8,127,662	+ 1.2	8,214,138
Ratio Sales to Prod.	80.0%		114.3%		92.7%		80.5%		98.2%		103.2%
STOVE DISTILLATE—Gallons											
Stocks Feb. 26	908,572		2,667,464		191,276		6,006		3,773,318		9,509,958
Prod. 2-26 to 3-5	535,266	—48.7	372,460	— 4.3	224,246	— 5.7	27,388	+ 3.0	1,149,360	—31.9	1,640,749
Ship. 2-26 to 3-5	744,765	—45.1	818,881	—28.8	228,978	—36.0	18,942	—43.1	1,811,566	—37.5	3,596,697
Stocks March 5	699,073	—23.1	2,221,043	— 2.0	186,544	— 2.5	4,452	—25.9	3,111,112	—17.5	7,554,010
Ratio Sales to Prod.	139.1%		219.9%		102.1%		108.9%		157.6%		219.2%
GAS OIL—Gallons											
Stocks Feb. 26	4,462,452		34,927,442		6,062,015		5,996,792		51,448,701		50,696,319
Prod. 2-26 to 3-5	1,412,180	— 7.3	1,090,092	—51.3	368,524	— 2.1	1,921,860	—11.1	4,792,656	—23.9	5,360,779
Ship. 2-26 to 3-5	944,465	+52.2	1,926,285	+60.6	358,365	— 3.3	2,261,790	+ 8.8	5,490,905	+28.6	7,298,856
Stocks March 5	4,930,167	+10.5	34,091,249	— 2.4	6,072,174	+ 0.2	5,656,862	— 5.7	50,750,452	— 1.4	48,758,242
Ratio Sales to Prod.	66.9%		176.7%		97.2%		117.7%		114.6%		136.2%
FUEL OIL—Gallons											
Stocks Feb. 26	10,815,641		45,986,240		21,285,289		7,711,813		85,798,983		104,772,215
Prod. 2-26 to 3-5	3,532,930	— 4.9	7,614,594	— 4.7	7,160,006	—10.6	6,395,695	+ 1.8	24,703,225	— 5.0	25,698,149
Ship. 2-26 to 3-5	4,570,698	+25.6	11,446,604	+ 9.5	8,431,319	— 9.0	7,887,370	— 8.8	32,335,991	+ 1.0	28,747,950
Stocks March 5	9,777,873	— 9.6	42,154,230	— 8.3	20,013,976	— 6.0	6,220,138	—19.3	78,166,217	— 8.9	101,722,414
Ratio Sales to Prod.	129.4%		150.3%		117.8%		123.3%		130.9%		111.9%

DAILY AVERAGE CRUDE OIL PRODUCTION AND IMPORTS



This chart is based on official complete figures of A. P. I and is a week older than the production estimates given in regular tabular form above.

Crude Production by Districts

Daily average gross crude output of United States, by fields, for week ending with dates given below, as compiled by American Petroleum Institute

National Petroleum News

OKLAHOMA

	Mar. 6	Feb. 27
North Braman	2,150	2,150
South Braman	9,050	8,150
Blackwell	3,150	3,250
Hubbard	1,850	2,000
Thomas	7,450	8,600
Tonkawa	44,400	44,250
Garber	25,100	26,350
Burbank	44,300	44,500
Osage, outside Burbank	33,100	33,200
Watchorn	2,650	2,800
Cushing	22,550	22,500
Yale Jennings	16,250	15,650
Davenport	21,050	21,150
Bristow-Slick	31,700	31,850
North Okmulgee	18,300	18,400
Lyons-Deaner	4,300	4,350
Stroud	2,600	2,850
Cromwell	19,300	19,700
Papoose	13,800	14,250
Wewoka	16,850	17,250
Duncan district	7,650	7,600
Graham	9,400	9,300
Fox	3,800	3,750
Healdton	14,950	15,000
Hewitt	12,250	12,300
Others	65,200	64,250
Total Oklahoma	453,150	455,400
Decrease		2,250

KANSAS

	Mar. 6	Feb. 27
Florence-Covert	1,800	1,800
Peabody-Elbing	4,550	4,650
Eldorado-Towanda	14,200	14,150
Augusta-Fox-Bush	5,000	5,000
Rainbow Bend	4,850	5,100
Russell	5,550	5,100
Greenwood County	42,000	41,500
Others	26,000	25,950
Total Kansas	103,950	103,250
Increase		700

NORTH LOUISIANA

Homer	5,800	5,900
Haynesville	10,350	10,350
Caddo, light	9,000	9,100
Caddo, heavy	2,200	2,300
De Soto, Red River	4,100	3,800
Elm Grove	700	550
Bellevue	2,300	2,300
Cotton Valley	8,400	8,250
Urania	6,600	5,600
Total North Louisiana	49,450	48,150
Increase		1,300

ARKANSAS

El Dorado	7,600	7,700
Smackover, light	18,700	18,950
Smackover, heavy	133,300	137,250
Stephens	1,500	1,500
Nevada	1,600	1,600
Total Arkansas	163,900	167,000
Decrease		3,100

NORTH TEXAS

	Mar. 6	Feb. 27
Burkburnett	12,400	12,350
Electra	16,350	16,300
Iowa Park and K-M-A	5,550	5,500
Wilbarger	11,650	11,400
Panhandle	6,200	5,600
Petrolia	300	300
Others	900	950
Archer County	27,800	27,300
Total North Texas	81,150	79,700
Increase		1,450

EAST CENTRAL TEXAS

Mexia	13,450	13,350
Currie	1,100	1,100
Richland	2,300	2,300
Corsicana-Powell	32,800	32,600
Wortham	11,200	10,800
Total East Central Texas	60,850	60,150
Increase		700

WEST CENTRAL TEXAS

Stephens County	12,750	12,750
Eastland County	5,900	5,900
Desdemona	2,100	2,050
Young county	8,400	8,250
Palo Pinto County	400	400
Callahan County	4,450	4,500
Shackelford County	2,700	2,600
Reagan County	31,600	31,300
Others	9,400	5,300
Total West Central Texas	77,700	73,050
Increase		4,650

SOUTHWEST TEXAS

Luling	21,800	21,600
Mirando	5,700	5,700
Somerset	2,300	2,300
Lytton Springs	7,400	7,250
Piedras Pintas	450	1,250
Others	750	800
Total Southwest Texas	38,400	38,900
Decrease		500

GULF COAST

Goose Creek	9,600	9,600
Hull	15,300	15,250
Saratoga	1,300	1,300
Blue Ridge	750	800
Damon Mound	1,000	1,050
Batson	1,100	1,100
West Columbia	9,400	9,200
Humble	4,850	4,900
Pierce Junction	1,100	1,050
Sour Lake	4,150	4,500
Spindletop	2,700	2,850
Orange County	11,500	11,850
Edgerly	1,150	1,150
Evangeline	1,100	1,100
Vinton	6,700	6,600
Lockport	1,700	1,650
South Liberty	7,800	7,750
Big Creek	1,400	1,400
Boling	6,550	8,800
Others	1,700	1,700
Total Gulf Coast	90,850	93,600
Decrease		2,750

ROCKY MOUNTAIN

WYOMING

Salt Creek	55,050	57,100
Grass Creek	2,800	2,750
Elk Basin	700	650
Big Muddy	3,300	3,350
Lost Soldier	3,950	4,250
Rock River	3,150	3,100
Teapot Dome	1,500	1,150
Others	4,600	4,650
Total Wyoming	75,050	77,000
Decrease		1,950

	Mar. 6	Feb. 27
MONTANA		
Cat Creek	3,050	3,050
Sunburst	15,000	15,200
Total Montana	18,050	18,250
Decrease		200
COLORADO		
Moffat (Craig)	3,800	3,450
Fort Collins	2,350	2,700
Florence	400	400
Others	400	450
Total Colorado	6,950	7,000
Decrease		50
NEW MEXICO		
Artesia	3,000	3,300
Hogback	500	500
Rattlesnake	350	300
Total New Mexico	3,850	4,100
Decrease		250
Total Rocky Mountain	103,900	106,350
Decrease		2,450
CALIFORNIA		
Santa Fe Springs	48,000	48,000
Long Beach	110,500	112,000
Huntington Beach	45,000	44,500
Torrance	28,000	28,000
Dominguez	21,500	23,000
Rosecrans	21,500	22,000
Inglewood	52,500	53,500
Midway-Sunset	92,000	92,000
Others	180,000	180,000
Total California	599,000	603,000
Decrease		4,000
EASTERN		
(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	98,000	98,500
Decrease		500
Production Summary		
Production east of Rockies	1,321,300	1,324,050
Decrease		2,650
Total Production in U. S.	1,920,300	1,927,050
Decrease		6,650

*Revised

Crude Changes

OIL CITY, March 8.—On March 8 Joseph Seep Purchasing Agency reduced all Pennsylvania grade crude 25 cents, excepting Macksburg, O. district, which was cut 35 cents and Gaines district and Keister grade which remained unchanged. All other eastern crudes were unchanged. New prices are: Bradford-Alleghany district, $3.65; rest of Pennsylvania, $3.55; Pennsylvania grade in West Virginia, $3.50.

* * *

SHREVEPORT, March 9.—On March 9 Standard Oil Co. of Louisiana, followed by Louisiana Oil Refining Corp., reduced Bellevue, Louisiana crude 15 cents, to $1.50 per barrel.

(Continued from page 30)

Oil Co., will talk on "Good Housekeeping."

Committee meetings will occupy the evening. J. S. Gibson, Praire Pipe Line Co., will have charge of the membership committee meeting; George Hannum, Mid-Continent Petroleum Corp., of the nominating committee; and C. L. Swim of the by-law committee.

Claude E. Connally, commissioner of labor for Oklahoma, will lead the opening session Saturday morning with a talk on safety laws. Reports will be made by the various committees and officers will be elected for the coming year.

—*N. P. N. Staff Photo*

A. F. Garrett, assistant general manager, Tidal Refining Co. and Neil Buckley, Carson Petroleum Co., both of Tulsa.

The Petroleum Safety Council of the Mid-Continent Oil & Gas Association was organized in January, 1924. The council has been engaged in holding safety meetings throughout the field, producing and showing safety motion picture films, carrying on a publicity campaign and collecting statistics of accidents for study. The accompanying table shows the number of accidents and their severity sustained by employees of a large number of companies in the Mid-Continent from April 1 to July 1, 1925.

Summary of Accident Analysis Reports

April 1st, 1925, to July 1st, 1925

GASOLINE MARKETING

No. of Employees	Hours Worked	Temp.	Partial Permanent	Total Permanent	Death	Total Number	Days Lost	N.S.C.* Freq.	N.S.C.* Sev.
183	121,892	1	..	..	..	1	35	8.20	.28
161	126,169	2	..	..	..	2	15	15.87	.119
260	208,771	5	..	..	..	5	30	24	.14
284	251,862	6	1	..	..	7	195	27.8	.775
256	208,764	13	..	..	..	13	184	62.32	.881
262.6	163,862.4	14	..	..	..	14	103	85	.6
				PRODUCTION					
235	192,465	5	..	..	..	5	67	25.97	.34
363	260,393	9	..	..	..	9	159	34.	.61
1066	863,460	11	..	..	..	11	84	12.	.097
285	286,800	9	2	..	..	11	3,300	38.45	11.06
783	531,160	19	..	..	..	19	290	35.75	.52
410	373,400	25	..	..	..	25	424	66.95	1.135
339	370,260	23	..	..	2	25	12,250	67.52	33.09
910	640,225	27	..	..	..	27	8,146	42.00	12.72
686	561,854	28	..	..	..	28	438	49.83	.779
1197	749,452	50	1	..	..	51	2,586	68.00	3.45
2000	1,620,000	55	3	..	..	58	6,950	35.8	4.29
1086	965,669	64	2	..	..	66	1,466	68.35	1.52
1660.9	736,401.6	89	3	..	..	92	2,759	124.9	3.7
2616	2,380,560	175	7	..	..	182	5,627	76.45	2.36
				REFINING					
406	276,212	3	..	..	..	3	258	10.86	.93
201	146,507	4	1	..	..	5	1,907	34.129	13.01
220	158,631	5	..	..	..	5	20	31.64	.126
913	588,858	15	..	..	..	15	132	25.47	.224
597	488,743	16	..	..	..	..	266	32.72	.542
301	194,645	21	..	..	..	21	205	107.9	1.22
				PIPE LINE					
77	71,190	0	..	..	..	..	.....	.....	.....
71	64,880	1	..	..	..	1	16	15.41	.246
144	87,314	3	..	..	..	3	45	34.4	.51
305	231,689	4	..	..	..	4	19	17.3	.082
395	229,730	3	1	..	..	4	845	17.	3.67
319	233,032	12	..	..	2	14	12,508	60.07	53.67
2784	2,129,952	77	1	..	..	78	1,740	36.62	0.817
1825	1,660,750	100	..	..	..	100	1,887	60.21	1.14

*N. S. C.—National Safety Council.

Institute Issues Uniform Balance Sheet For All Oil Companies

STATEMENT BY M. W. MATTISON, GENERAL CHAIRMAN, COMMITTEE ON UNIFORM METHODS OF OIL ACCOUNTING OF AMERICAN PETROLEUM INSTITUTE

YOUR Chairman desires to make a statement with reference to the work undertaken by the Committee during the past year.

It is unfortunate that, of necessity, the members of your committee are in almost every instance chief accounting officers of the interests they represent, and the importance of their work has rendered it almost impossible to get from them as much time as was desired. This statement is made not in criticism of any member of the committee but is made solely for the purpose of bringing before the Institute one of the great difficulties encountered in the work undertaken.

Mr. Rodney S. Durkee of the General Petroleum Corporation of California, Chairman of the Pacific Coast Group, will make a statement to you on behalf of his fellow-committeemen, and this statement by your Chairman is merely supplementary to the statement of Mr. Durkee.

I am sure I voice the opinion of every member of the committee when I say that we feel that the Chart of Accounts being submitted to you is merely the basis for future work, and it may be likened to the foundation of a structure upon which we will later build.

We have given great care and thought to this Balance Sheet and in connection with it we have, of necessity, considered Operating and Income Accounts to a rather large extent, although we are not at this meeting endeavoring to submit a chart of such accounts.

However, the data which has been furnished us is very full and complete and from it we hope to work out complete Operating and Income Accounts during the coming year which will be submitted for your approval at the next annual meeting of the Institute.

I am deeply grateful to each and every member of the Committee for the unselfish aid given in the work and I feel sure that each and every man has given all the time which his other duties would permit. There has been no excess pride of opinion exhibited in the work and as will be stated to you by Mr. Durkee it is submitted on its worth and criticism is invited, rather than resented, and it is hoped that everyone interested in the industry will feel free to submit any criticisms which might occur to them, for we hope through such friendly and constructive criticism to finally arrive at the desired end.

STATEMENT OF MR. RODNEY S. DURKEE, COMPTROLLER, GENERAL PETROLEUM CORPORATION OF CALIFORNIA

Chairman, Pacific Coast Group of the American Petroleum Institute Committee on Uniform Methods of Oil Accounting

THE Committe on Uniform Methods of Oil Accounting was appointed as the result of a resolution passed by the group meeting of oil company accountants held in Fort Worth in December, 1924. The group meeting at Fort Worth recommended that the subject of uniform methods of oil accounting should be approached in terms of principles of accounting, eliminating details personal and private to individual interests. It was further suggested that these principles should include a uniform classification of accounts, with definitions constituting balance sheet, income and expense accounts.

"The personnel of the Committee was selected early in January, 1925, and a general meeting was held in Chicago on January 30, 1925, at which time the scope and plan of the year's work were agreed upon. This meeting was followed by regional meetings in March, a meeting of regional chairmen in New York in April, a meeting in California in May, attended by Mr. Mattison, and regional meetings and a meeting of regional chairmen in Chicago in June.

"The next five months were spent in further work by individual members of the general committee, and a meeting of the entire committee was held in Chicago in December, 1925. At this meeting, it became apparent that it would be impossible to complete all of the work originally outlined at Fort Worth, and it was finally decided to present only the general balance sheet and explanatory text at this convention. A sub-committee was appointed to finally review the data already assembled, and this sub-committee has been in session here for the past week.

"The results presented to you today may make it appear that 'the mountain has labored and brought forth a mouse,' but I bespeak your earnest consideration of what we are submitting. Almost without exception, the individual members of the committee have devoted themselves unselfishly to this work. To interject a personal note, I might say that I have traveled over 25,000 miles and have spent over one-quarter of my time during the past year directly on this work.

"Inasmuch as we were unable to accomplish all of the work outlined at the beginning of the year, we felt it desirable to postpone preparation of the income and expense accounts in favor of the balance sheet. Our reason for this is perhaps best stated in the following quotation from a recent contribution to the literature of accountancy:

"Among the many kinds of financial statements which confront the man in business today, the balance sheet holds the most important place. Nearly all other financial statements support it or are based upon it, or in some other way are reflected in it. Every financial item to which an organization holds title or legal claim, and likewise every legal claim against it, has its place in that organization's balance sheet. Every attempt to measure or define the wealth of one man or of one commercial unit, as apart from that of another, finds expression in the balance sheet. It is the vital statement in any broad scheme of recording ownerships.

"The balance sheet attempts to display, through condensed symbols, the true financial conditions at a given date of some individual or other financial unit. These symbols are classifications or group names which have a definite significance. Full knowledge of the meaning of these symbols is evidently necessary in the preparation of a balance sheet if it is to be anything more than a mere jumble of words and figures. Similarly, full knowledge of these symbols is necessary if one is properly to read a balance sheet which someone else has prepared.

"If a classification means one thing to the one who records it and another thing to the one who reads it, there can be no exact transmission of knowledge or opinion from the one to the other. Either misstatements of fact or misunderstanding of statements, or both, must result where there is not a common understanding of the language of the balance sheet on the part of those concerned. Unfortunately, such differences of

understanding are frequent in business. Such misstatements and misconstructions should decrease as there is a common increase in the knowledge and understanding of exactly what properly may be included in each classification used in a balance sheet and of how the values applicable to them are determined.

"It must be kept in mind that there is no potentate of accountancy who decrees that a certain term shall mean thus or so. Rather, the meaning today is the result of a gradual development, which may carry it on to quite a different meaning tomorrow. This is true of all the principles which find expression in accountancy today. They are not the result of some vote of legislature or committee or any other such body. Instead, they are merely the classified results of the accumulated experience of business men."

"In approaching the work of preparing a uniform general balance sheet, we were actuated by a desire to present accounts which would cover every probable contingency arising in the industry without making them so complicated that they would not appeal to the smaller companies. We also had in mind the details of terminology and arrangement essential to make the completed balance sheet intelligible and informative to our executives, our bankers and the investing public.

"We have drawn freely on the available literature on accounting subjects, and on the actual problems and experiences of our committee members and other oil company accountants. We have tried to define our accounts in simple terms and we have endeavored to present our balance sheet in a logical and orderly arrangement. As you shall see, we have adopted the Federal Reserve Board form in which the assets and liabilities are arranged in order of liquidation.

"It is not necessary to weary you with a dry recital of the hours of friendly argument, the search for appropriate words and phrases, and the annoyances of editing and clarification in which your committee has indulged. May it not suffice to say that our completed product is an honest, earnest attempt to present something worthwhile—a foundation on which to build our finished structure.

"Those of us who have had experience in public utility, railroad or trade association accounting work, know that there is no such thing as a permanently uniform method in the accounting world. Accounting success does not rest upon infallible judgment, but rather on a mastery of fundamentals with the courage to experiment with new ideas to meet changing conditions, and the ability to learn from mistakes. Just the moment an accountant comes to regard himself as an expert in theory and practice, and ceases to evolve new ideas to meet new problems, he may be sure that dry rot has begun. However, we will find that if we do experiment, we will finally get to the point where we stumble, we fall forward rather than backward, and this makes a difference of two full lengths as to where our heads and brains are.

"We feel that serious consideration should be given to the future work on uniform methods of accounting, and we have had various discussions as to the best program to suggest. We have a large amount of data and have established contacts with oil company accountants which make it desirable to at least include some of the present members on the body which will carry on the future work. My own personal opinion, possibly not shared by all the committee members, is to reduce the size of the committee so that there will be better co-ordination than is possible with a large committee scattered over the entire country. I believe it is logical that Mr. Mattison should be retained at the head of this work, and that he should be given authority to

A Vitally Important Forward Step for the Industry

IT will be difficult for the oil industry to appreciate until it is completely worked out and put into practice the great value of the work on unlform methods of oil accounting, the American Petroleum Institute has been carrying on the past two years.

The institute special committee on this subject of which M. W. Mattison, the institute's tax expert, is general chairman, has issued a uniform general balance sheet, which is published herewith. The various items entering into this balance sheet have been very carefully defined and those definitions will be published in their entirety in following issues of National Petroleum News.

The institute committee has also made considerable study of classification of income and profit and loss accounts. This was reported on at the recent Los Angeles meeting of the institute by H. G. Humphreys, of the Skelly Oil Co., Tulsa, a member of the committee, and his report will also be published in a later issue of National Petroleum News.

The standard general balance sheet, as it is now issued, covers all branches and operations of the industry. It is designed to be applicable for large companies and small companies, for intergrated companies carrying on operations in all branches of the business and for concerns operating in only one branch.

The balance sheet is designed, for example, so that the small local marketing company could carry on its bookkeeping complete based on that portion of the balanced sheet applying to marketing operations.

Mr. Mattison's committee, in issuing this general uniform balance sheet, calls attention to the fact that it is only tentative at present. It represents the best thought of the committee, made up of leading oil company auditors and accountants.

The committee, however, now presents this balance sheet for study and criticism by the industry at large. Suggestions for changes will be welcomed and it will finally be presented as a model form of all accounting methods which can be used by the industry throughout.

It is impossible to enumerate or even foresee now, the great advantage that will accrue to the oil industry through its having available for its use a form of accounting that will give a faithful and accurate report of its operations at all times.

As far as is known the oil industry is the only business to voluntarily undertake the effort to draw up a model standard form of accounting. Other industries, notably the railroads, have had a standard accounting system forced upon them by the government.

The oil industries relations with the public will be greatly benefited if financial reports of oil companies can be made on such an approved standard method. Promotion companies will have more difficulty in giving a misleading picture of their operations. The industry itself will be able to balance the operations and market conditions, in various branches of the business in better fashion than before.—V. B. G.

select his associates and to change the personnel of the committee if any member does not or cannot co-operate.

"I am sure that all the members of the committee have a hearty aversion for the sickening swagger that so often characterizes the counsel of accountants who appoint themselves advisers to others. We have had in mind no such preachment. We offer our work without apologies, with pride in what we have accomplished, but with the earnest hope that you will discuss it freely criticize it constructively and assist us in bringing it to fruition."

The other members of the committee besides Mr. Mattison and Mr. Durkee are: Paul R. Jones, Henry L. Doherty & Co., H. A. Gidney, Gulf Oil Corp., John H. Tuttle, Standard Oil Co. of California and C. H. Jay, Pure Oil Co.

Suggested Items for Balance Sheet

0. CURRENT ASSETS

0.0 Cash
- 0.00 Cash on Hand and in Banks
- 0.01 Cash in Transit
- 0.02 Petty Cash and Other Working Funds
- 0.03 Special Deposits

0.1 Marketable Securities
- 0.10 United States Government Securities
- 0.11 Securities of Companies Not Affiliated
- 0.12 Other Marketable Securities

0.2 Notes and Acceptances Receivable
- 0.20 Trade Acceptances Receivable
- 0.21 Customers' Notes Receivable
- 0.22 Other Notes Receivable

0.3 Accounts Receivable
- 0.30 Customers Accounts Receivable
- 0.31 Claims Receivable
- 0.32 Other Accounts Receivable

0.4 Due from Officers and Employees
- 0.40 Notes Receivable from Officers and Employees
- 0.41 Advances to Officers and Employees

0.5 Inventories—Oil
- 0.50 Crude Oil
- 0.51 Unfinished Oils
- 0.52 Finished Products
- 0.53 Oil Exchanges

0.6 Inventories—Materials and Supplies
- 0.60 Materials and Supplies in Warehouses
- 0.61 Materials and Supplies in Shop Stocks
- 0.62 Materials and Supplies in Transit

0.7 Other Current Assets
- 0.70 Unmatured Interest on Notes Receivable
- 0.71 Unmatured Interest on Securities of Companies Not Affiliated
- 0.72 Other Unmatured Interest Receivable
- 0.73 Unmatured Rentals Receivable
- 0.74 Unmatured Royalties Receivable
- 0.75 Unmatured Dividends Receivable
- 0.76 Miscellaneous Current Assets

1. PREPAID CHARGES

1.0 Prepaid Interest
1.1 Prepaid Rentals
1.2 Prepaid Taxes
1.3 Prepaid Insurance
1.4 Other Prepaid Expenses

2. PERMANENT INVESTMENTS

2.0 Investments in Non-affiliated Companies
- 2.00 Stocks Owned
- 2.01 Other Securities Owned

2.1 Investments in Affiliated Companies
- 2:10 Stock Owned
- 2.11 Other Securities Owned
- 2.12 Advances
- 2.13 Notes Receivable (Loans)
- 2.14 Accounts Receivable (Deferred)

2.2 Investments in Subsidiary Companies
- 2.20 Stocks Owned
- 2.21 Other Securities Owned
- 2.22 Inter-Company Accounts

3. SINKING AND SPECIAL TRUST FUNDS

3.0 Uninvested Funds
3.1 United States Government Securities
3.2 Company Securities
3.3 Securities of Companies Not Affiliated
3.4 Securities of Affiliated and Subsidiary Companies
3.5 Unmatured Interest Receivable
3.6 Life Insurance—Employees

4. FIXED (CAPITAL) ASSETS

4.0 Production Department—Oil and Gas
- 4.00 Lands and Leases
  - 4.000 Oil Lands and Leases—Cost
  - 4.001 Gas Lands and Leases—Cost
  - 4.002 Oil Lands and Leases—Appreciation March 1, 1913
  - 4.003 Gas Lands and Leases Appreciation March 1, 1913
  - 4.004 Oil Lands and Leases—Discovery
  - 4.005 Gas Lands and Leases—Discovery
  - 4.006 Oil Lands and Leases—Appraisal
  - 4.007 Gas Lands and Leases—Appraisal
  - 4.008 Other Lands and Easements
    - 4.0080 Fee Lands
    - 4.0081 Leases
    - 4.0082 Rights-of-Way
- 4.01 Plant and Equipment
- 4.09 Intangible
  - 4.090 Patents
  - 4.091 Copyrights
  - 4.093 Franchises
  - 4.094 Goodwill

4.1 Pipe Line Department
4.2 Storage Department
4.3 Refinery Department
4.4 Casinghead Gas Department
4.5 Tank Car Department
4.6 Marine Department
4.7 Sales (Marketing) Department
4.8 Other Operating Departments
4.9 Administrative Department

5. DEFERRED CHARGES

5.0 Discount of Bonds
5.1 Discount on Other Securities
5.2 Organization Expenses
5.3 Other Deferred Charges

LIABILITIES

6. CURRENT LIABILITIES

6.0 Notes and Acceptances Payable
- 6.00 Notes Payable
- 6.01 Trade Acceptances Payable

6.1 Accounts Payable
- 6.10 Accounts Payable
- 6.11 Accured Payroll
- 6.12 Other Accounts Payable

6.2 Notes and Acceptances Receivable Discounted
- 6.20 Acceptances Receivable Discounted
- 6.21 Notes Receivable Discounted

6.3 Accrued Liabilities
- 6.30 Accrued Interest Payable

6.31 Accrued Rentals Payable
6.32 Accrued Taxes Payable
6.33 Accrued Insurance Payable
6.34 Accrued Royalties Payable
6.35 Other Accrued Liabilities

6.4 Other Current Liabilities

6.40 Dividends Payable
6.41 Matured Interest Coupons Unpaid
6.42 Unpresented Merchandise Coupons
6.43 Other Current Liabilities

7. OPERATING RESERVES

7.0 Reserves for Depletion—Cost

7.00 Reserves for Depletion of Oil Properties
7.01 Reserves for Depletion of Gas Properties

7.1 Reserves for Depletion—Appreciated Values

7.10 Reserves for Depletion of Oil Properties—March 1, 1913, Valuation
7.11 Reserves for Depletion of Oil Properties—Discovery Valuation
7.12 Reserves for Depletion of Gas Properties—March 1, 1913, Valuation
7.13 Reserves for Depletion of Gas Properties—Discovery Valuation

7.2 Reserves for Depreciation (Including Obsolescence)

7.3 Reserves for Amortization

7.30 Reserves for Amortization—Undeveloped Leases
7.31 Reserves for Amortization—Other Assets

7.4 Reserves for Bad Debts

7.5 Other Operating Reserves

8. DEFERRED CREDITS

8.0 Premium on Bonds and Notes Issued

8.1 Other Deferred Credits

9. LONG-TERM INDEBTEDNESS

9.0 Bonds Payable

9.1 Loan Notes Payable

9.2 Purchase Obligations

10. CAPITAL AND SURPLUS

10.0 Preferred Capital Stock

10.00 Preferred P.V. Capital Stock Authorized
10.01 Preferred P.V. Capital Stock Unissued
10.02 Preferred P.V. Capital Stock Subscribed
10.03 Preferred P.V. Capital Stock Authorized Dr. Dt.
10.04 Preferred N.P.V. Capital Stock Authorized Dr. Dt. Memo., Total Charges Not Made
10.05 Preferred N.P.V. Capital Stock Outstanding, Total Charges Not Made

10.1 Common Capital Stock

10.10 Common Capital P.V. Stock Authorized
10.11 Common Capital P.V. Stock Unissued
10.12 Common Capital P.V.Stock Subscribed
10.13 Common P.V. Capital Stock in Treasury
10.14 Common Capital N.P.V. Stock Authorized, Dt. Memo., Total Charges Not Made
10.15 Common Capital N.P.V. Stock Outstanding, Total Charges Not Made

10.2 Scrip

10.3 Surplus

10.30 Capital Surplus Paid In
10.31 Surplus from Appreciation—March 1, 1913
10.310 Total Appreciation
10.311 Realized Appreciation
10.32 Surplus from Appreciation—Discovery
10.320 Total Appreciation
10.321 Realized Appreciation
10.33 Surplus from Appraisal
10.34 Earned Surplus (Appropriated)
10.35 Earned Surplus (Unappropriated)

Propose Rules for Handling of Tetra-Ethyl Lead and Ethyl Gas

WASHINGTON, March 8

AN elaborate code for regulating the manufacture of tetra-ethyl lead, the blending of the latter to make Ethyl fluid, the mixing of that fluid with gasoline or "ethylizing" as the process is called, for the distribution of Ethyl gasoline and the conduct of garages, repair shops, service stations and filling stations was made public by the public health service today.

The regulations have been submitted to the health authorities of the various states for criticism and comment. The regulations were formulated in accordance with the recommendations of the committee appointed by Surgeon General Cumming. The states alone can make them operative. A conference is to be held on the proposed regulations some time in May.

The regulations contain rules for the periodical examination of employees of the plants where the basic materials are manufactured, of the mixing plants, and rules for the construction of plants and specifications for garages or repair shops holding more than five cars and all filling and service stations.

The regulations for garages, repair shops and filling and service stations are not limited to those where Ethyl gas is sold or used. They are general in their application, including the posting of these regulations, warnings that automobile exhaust gas is dangerous, that motor fuels, other than ordinary gasoline, should not be used for any purpose other than motor fuel and finally that the fumes from even ordinary gasoline may be injurious.

Among the most prominent proposals are these:

That a dye be added to Ethyl fluid in quantity great enough to give staining qualities to Ethyl gasoline so as to deter use for cleaning or other similar purposes.

That ethylizing, except for research, army, navy or air mail use, be limited to main distributing centers and in not less than tank car lots, and that in addition to door and window ventilation, garages, repair shops and service and filling stations be required to have ceiling level openings, without down draft, equal to two tenths per cent of floor space available for cars, together with inlets near the floor level of equal effectiveness so as to give positive dilution of exhaust gases as generated and all these arrangements to be minimum.

The maximum content of tetra-ethyl lead in commercial Ethyl gasoline or other motor fluid is limited to one part in 1260, by volume for commercial tetra-ethyl lead and one in thirteen hundred for chemically pure tetra-ethyl lead. The regulations propose daily inspections of the tetra-ethyl lead plants and the plants where the fluid that is mixed with gasoline is prepared.

WASHINGTON, March 8.—The Indian Office has announced the public auction of oil and gas leases on allotted Indian lands, at the Kiowa agency, Anadarko, Okla. for March 12.

TULSA, March 8—R. R. Zimmerman, personnel officer in the employment department of the Marland Refining Co., was married on Feb. 28, at Ponca City to Miss Gladys Hall. The two are now on their honeymoon during which they will visit New York and eastern cities.

Tide Water and Associated Companies Grouped in $235,000,000 Merger

Staff Special

CLEVELAND, March 8

GROUPING of the Tide Water Oil Co. operating in the east and Mid-Continent and with markets for lubricating oils all over the world, and the Associated Oil Co., one of the leading California companies which has markets throughout Pacific coast states, in China and the Philippine islands, is to take place through a new corporation chartered in Delaware and to be known as the Tide Water Associated Oil Co. The combined assets of the two companies after depreciation and depletion, total $235,000,000.

The new corporation will be a holding company. The articles of incorporation call for 1,500,000 shares of 6 per cent cumulative convertible preferred stock, $100 par, and 10,000,000 shares of common stock without par value.

Blair and Chase Bankers

The bankers in the grouping are Blair & Co., which acquired control of the Associated after the merger of the Pacific Oil Co. and Standard Oil Co. of California, and the Chase Securities Corp., which has acted with Blair in a number of large financial deals, perhaps the most notable of which was the acquisition of the Pan-American Petroleum & Transport Co. for themselves and the Standard Oil Co. of Indiana a year ago. Blair has also been interested in California Petroleum Corp. financing and the recent merger of the Barnsdall Corp. and the Waite Phillips Co.

Control of the Tide Water and Associated will pass to the new corporation through an exchange of stock. Holders of Tide Water common stock will be given one and a third shares of common stock in the new company for each share of Tide Water held. Tide Water's outstanding $25,000,000 of 5 per cent convertible preferred stock will not be affected by the exchange. Associated's 6 per cent 12-year notes also are not affected.

Associated Oil stockholders have an option of two plans. They may sell their stock for $58.50 a share or they may exchange one share of Associated for one third share of the new company's preferred and one share of its common.

The exchange privilege expires March 20. Associated Oil stockholders may make the exchange by depositing their certificates at the Anglo-London-Paris National bank, San Francisco, or at Blair & Co. or Chase National bank, New York. Tide Water stockholders may deposit their certificates at the office of the Tide Water Company in New York.

After the exchange it is expected there will be outstanding 763,471 shares of the new company's preferred and 5,480,733 shares of its common. The preferred is convertible into common stock for 10 years on a basis of $50 a share for the common or one share of preferred for two shares of common. Directors announced they expected to put the new company's common stock on a $1.20 a year dividend basis. This would mean a gain of 60 cents a share for Tide Water stockholders and $1.20 a share for Associated holders who elected to take the preferred and common stock instead of selling out.

Officers of New Company

The operating companies are to continue under their present officers. Officers of the new company will be: Axtell J. Byles, president of Tide Water, president; Paul Shoup, president of Associated, vice-president; Robert McKelvy and Edward L. Shea, vice-president of Tide Water, vice-presidents. These officers together with Henry W. de Forest, chairman of the executive committee of the Southern Pacific Co., W. F. Humphrey and George White will comprise the directorate.

Bankers pointed out that the new company will have assets of about $240,000,000 and that the total commitment, including the cash offer for all Associated and the 500,000 additional common of the new company which may be issued, would approximate $150,000,000. Also, that the est oil concerns in the country, operating in Pacific Coast, Mid-Continent, eastern and foreign territories.

It was stated by the bankers that the new company had power to acquire the securities of other companies. This statement means, it is believed, that more oil companies will later be taken into the group.

Combined Net Profits

The approximate consolidated net profits for the Associated and proprietary companies, the Tide Water and subsidiary companies and the two combined, after depreciation, depletion, interest, federal taxes and other charges, are as follows:

	Associated	Tide Water	Combined
1922	$ 4,291,969	$ 4,923,317	$ 9,215,286
1923	5,950,682	2,908,216	8,858,898
1924	6,405,329	3,898,413	10,303,742
1925	12,000,000	5,678,059	17,678,059

Total gross crude oil production of Associated Oil Co. for the year 1925 amounted to 18,211,030 bbls., an increase of 101 per cent within five years. The daily refinery capacity of the company in 1925 amounted to 75,000 bbls., an increase of 212 per cent over 1920.

Net crude oil production of Tide Water Oil Co. in 1925 totaled 5,576,858 bbls., a gain of 22 per cent over 1920. The daily refinery capacity of the company during 1925 averaged 63,000 bbls., an increase of 112 per cent over 1920. The output of refineries (finished oils) during 1925 aggregated 11,337,308 bbls., an increase of 116 per cent over five years ago.

ASSETS

	Associated	Tide Water	Combined
Real estate, oil lands, leases, advances, investments	$128,617,625	$101,148,968	$229,766,594
Res. deprec. and depl.	41,741,171	32,827,907	74,569,079
	$ 86,876,454	$ 68,321,060	$155,197,515
Invest res.	.....	1,931,584	1,931,584
Sinking Funds	1,230,000	.....	1,230,000
	$ 88,106,454	$ 70,252,645	$158,359,099
Cash and Securities	2,470,480	16,588,565	19,059,045
Notes rec.	.....	616,440	616,440
Accounts rec.	7,648,558	4,818,909	12,467,467
Merchandise	19,710,017	15,395,526	35,105,544
Materials and sup.	2,862,344	1,729,125	4,591,470
Other current assets	1,202,009	91,383	1,293,393
Deferred assets	$ 671,344	$ 1,881,674	$ 2,553,019
Bond disc, other adjusted accts.	1,739,793	.....	1,739,793
Total	$124,411,002	$111,374,272	$235,785,274

LIABILITIES

6% Notes	$ 23,746,000	.....	$ 23,746,000
Due to Affil Co.	2,052,750	.....	2,052,750
	25,798,750	.....	25,798,750
Purchase money oblig.	.....	313,747	313,747
Acc and wages pay.	6,927,668	4,082,077	11,009,745
Loans and notes pay.	688,058	.....	688,058
Accr int and rents pay.	495,229	.....	495,229
Div Accr and Declared	1,133,366	.....	1,133,366
Accrued taxes	655,161	927,825	1,582,997
Due Co Affil not consol.	.....	115,103	115,103
Other Current liab.	618,908	.....	618,908
Stock subscriptions	.....	501,670	501,670
Def pur obligations	.....	1,556,171	1,556,171
Def liabilities	218,617	7,773	226,391
Res for conting.	.....	4,690,822	4,690,822
Unadjusted credits	1,908,113	.....	1,908,113
Minority interest	.....	92,717	92,717
5% preferred stock	.....	25,042,000	25,042,000
Cap stk (2,017,741 no par shares)	.....	50,461,687	.....
Assoc Oil com stk	56,000,000	.....	.....
Appreciated surplus	951,490	.....	*160,011,480
Profit and loss bal.	29,015,637	23,582,664	.....
Total	$124,411,002	$111,374,272	$235,785,274

*Assuming the consummation of proposed exchange of securities, this would be represented by preferred and common stock of the new company.

Wyoming Royalty Oil Will Be Sold

CASPER, WYO., March 6.—The royalty oil belonging to the state of Wyoming in the Salt Creek field is up for contract. Sealed bids are being received up to 10 a. m. of March 31 at the office of Commissioner of Public Lands, Cheyenne. No bid for less than the Mid-Continent posted price or the posted price for Salt Creek oil, whichever is the higher, will be entertained. It is also stipulated that the oil must be refined in the state.

The Continental Oil Co. has been buying the royalty oil for some time and the contract covering this will expire on April 30. It has been paying a price of 25 cents per barrel less than Mid-Continent price for similar gravity with minimum price of $1.50.

Most of the state's oil comes from Sec. 36-40-79, which is in the most productive part of the field. This section is operated by the Midwest Refining Co. and the state gets the lion's share—65 per cent royalty. Such contract was made some three years ago when newcomers in the district made an offer so high that the Midwest was forced to sacrifice all profits from its operations on this lease for the sake of holding it, as Sec. 36 forms a vital part of the company's operating plan. There are about 80 wells on the lease, producing from the First and Second Wall Creek sands and one producing from the Lakota.

Another state tract is Sec. 16-39-78, operated by the Argo Oil Co. It has seven producing wells. Still another is the southeast quarter of Sec. 16-40-79. which is edge territory and has one well producing from shale. The state's total oil from all three averages about 60,000 barrels per month.

S. O. Indiana Employes Get Stock Soon

CHICAGO, March 6.—Heads of big businesses all over the country are watching with interest the development of the employes' stock purchase plan of the Standard Oil Co. of Indiana which expires on the last day of this month. At that time 15,300 employes of the company will receive from the management 390,000 shares of the capital stock. These employes will then own 4.2 per cent of the company's stock which has a market value of $25,350,000.

"What will these employes do with the stock which they bought on the installment plan?" That is the question being asked by executives everywhere who would be glad to pursue a similar program if it would tend to bring about that desirable situation of having a company held extensively by the men who work for it. The thing has been tried before but as far as Standard Oil officials know that firm has gone into it more extensively than any other organization.

The plan was initiated five years ago and for every $1 paid on stock by an employe, the company contributed 50 cents. All the details in connection with the issuance of the stock was approved at the annual meeting of the stockholders held in Whiting, Ind., March 4. Among other matters of business completed at the stockholders' meeting was the re-election of the present directorate.

A new stock purchase plan for employes of the company was approved by the stockholders, showing the faith of the company in the personnel. This plan differs from the original one in some respects, however. The new plan is to run for three years instead of five, and an employe may subscribe 10 per cent of his wage or salary for stock instead of 20 per cent as under the expiring plan. The company will continue to contribute 50 cents to the employe's $1 toward the purchase of his stock.

There is another interesting provision in the new plan which provides that if an employe who has participated in the old plan parts with more than one third of his stock after March 31, he will not be eligible to participate in the new plan. There is, however, provision made in this regard. If an employe shows a good cause the board of directors shall have the power to relieve the deserving employe from this stipulation. To be eligible, an employe must have been in the continuous and exclusive service of the company for one year.

The plan applies to employees of the Midwest Refining Co., and the Dixie Oil Co., subsidiaries.

New Grease and Soap Jobber in Ohio

CINCINNATI, O.—Oil-Kraft, Inc., is the name of a new grease and soap compounder and jobber organized here to sell its production of grease and soap to the Independent oil jobber. John R. Bunnell who formerly for several years was in charge of laboratory work and grease and soap production at the Cincinnati plant of the Pure Oil Co., Columbus, O., is now building a plant here.

Roger E. Hannaford, who for the past 10 years has been with the Pure Oil Co. and its predecessor. the Moore Oil Co. at Cincinnati, resigned from the former company on Jan. 1 and is now an officer with Oil-Kraft. The new plant will be in operation between March 15 and Apr. 1.

Ferguson Goes With Gibson

CASPER, WYO., March 6.—George L. Ferguson, for several years prominently identified with the Marine and affiliated oil companies, operating in Wyoming, has become general field superintendent of the Gibson Oil Co. and will be located at Amarillo, Tex. Mr. Ferguson was general superintendent for the Marine and other companies until they were merged into the Argo Oil Co., when he was made general superintendent of the Salt Creek operations.

A. H. Caward Buried

A. H. Caward

Staff Special

CHICAGO, March 6.—A. H. Caward, one of the pioneers of the Independent petroleum industry in the west, was buried at Waterloo, Ia., Saturday, Feb. 27. He was the founder of the Hawkeye Oil Co., and at the time of his death was still its official head as chairman of the board of directors. Mr. Caward died very suddenly in Kansas City, Mo. on Feb. 23.

After a trip to California to visit his oldest son, Harry Caward of Los Angeles, and a subsequent tour into Mexico, the deceased was on his way home to Waterloo. In Kansas City he was obliged to change trains and, having a little time to wait, was taking a walk. In the course of this walk Mr. Caward fell dead on the street.

Mr. Caward was affectionately called "Doc" by men of like age and standing in the oil business and he was known favorably from coast to coast. He founded the Hawkeye Oil Co. 19 years ago. In the subsequent years he sold Hawkeye to the Producers & Refiners Corp., of Denver but later bought it back and at no time lost control of it.

He was one of the organizers and early presidents of the Western Oil Jobbers' Association, one of the original group of oil jobbers from which the National Petroleum Marketers' Association was formed. Early in his business career he worked for the Standard Oil Co. at Dubuque, Ia.

Walter B. Caward, the younger son of the deceased, is president of the Hawkeye Oil Co., lives in Waterloo and is actively in charge of the Caward business worth well upwards of $2,000,000. Among other Caward interests in Waterloo are the Black Hawk Oil Co., the Caward-Dart Truck Co., the Caward Building Co., and other smaller institutions.

Crude Oil-Natural Gasoline Mix Must Pay Gasoline Rate

By A. E. Heiss
N. P. N. Staff Writer

WASHINGTON, March 8. MIXING of casinghead gasoline with crude oil by artificial means, is an impossible conservation measure. If nature will do the work, without obvious aid from man, it will be all right. If a producer of crude does it, the mixture so prepared will be penalized, in a transportation sense, by being subjected to the payment of freight rates on the mixture the same as those on usable gasoline.

The foregoing is the meaning of a report Examiner Burton Fuller has made to the Interstate Commerce Commission on the complaint of the National Refining Co., and the Canadian Oil Companies, Ltd., against the Louisville & Nashville and other railroads, alleging the rates they were forced to pay on shipments of such a mixture, the casinghead gas component being estimated at 7 per cent, more than 3000 tank cars of it, from Beattyville, Ky. to Findlay and Toledo, O. and Petrolia, Ont. between Dec. 14, 1920 and Nov. 25, 1922.

Having no way to handle their casinghead gas, some of it as gas from the oil wells, produced by means of the vacuum process, and some from gas wells produced by the compression process, the shippers decided to run the casinghead gasoline into the crude tanks and ship the product to refineries under the crude oil rates.

All shipments prior to Aug. 17, 1922, were billed as crude oil. In July, 1922, the rate body informally ruled that they should have been billed as gasoline. Thereafter they were so billed and the complainants were billed for undercharges. So heavy were the charges under that ruling that there were no more shipments of the mixture. The casinghead gasoline was conveyed by pipe line thereafter. Thereby the railroads lived up to the reputation they have among many oil men, namely, that of doing everything they can, to force oil traffic from their rails. The forcing away, when it takes place, results from the safety men getting the upper hand in controversies between themselves and traffic men. The latter, generally speaking, do not regard the hazards of shipping oil as being as great as the safety men.

This case has been before the regulating body for several years. The Fuller report is really on a second trial of the matter. The first trial went to the point of final submission but the complainants made such pointed objections to the report of the examiner that the case was set down for further hearing solely for the development, as this report says, of the facts in respect of the alleged hazardous nature of the shipments involved.

The complaining refineries contended that in mixing the casinghead gas with the crude they were but restoring what there had been in the oil while it was in place in the sand. The examiner did not agree with that. The refiners also argued that the imposition of a higher rate than that on crude would be in contravention of conservation policy of the national government.

"If there be any conflict in this case between such considerations (conservation) and those of public safety, the latter are paramount and must prevail," said the examiner. He said the complainants admitted that the method of handling the casinghead gas, after condensation, in the field did not tend to conserve it, because, among other things, the testimony showed that the tops of the tanks were defective in that some of the boards on the tank tops showed cracks from three fourths to an inch wide.

"It is possible," said the examiner, "that the transportation hazard of such an artificial blend or mixture is not materially greater than some samples of crude oil in its natural state that could be furnished, but even where such a mixture has the same gravity, pressure, flash point, and gasoline content as a natural crude oil, there is an element, namely, an uncertainty or instability in the mixture that is not present in the crude oil alone.

"There have been many serious accidents in connection with the mixtures or blends of casinghead gasoline with refinery gasoline naphtha or kerosene caused by the oil spouting up in the air when the dome cover was suddenly removed, an unlawful act even when the pressure did not exceed seven pounds."

The examiner seemed to set great store by the fact that the oil men had declined to appoint a committee to experiment with such mixtures in a loaded tank car and that the Bureau of Explosives of the American Railway Association (Colonel Dunn's organization) had found that mixtures would boil out of steel drums when the internal pressure was as low as two pounds. The fact that one of the oil witnesses testified that he had seen crude oil in drums spout up in much the same fashion did not seem to impress him.

The money question in the case, while large, would have been insignificant in comparison with the question of alleged safety had the commission and the examiner come to the conclusion that if dome covers were not unlawfully removed, there would be no risk or hazard. The money question was whether, for the part of the haul from Beattyville to Cincinnati the complainants should pay 59.5 cents prior to July 1, 1922 and 53.5 cents thereafter or 15.5 cents before July 1 and 15 cents thereafter.

That, of course, meant the examination of the technicalities of freight rate tariffs. The examiner said that, in law, the higher rates were the ones to be paid but that they were unreasonable to the extent they exceeded the lower ones. North of the Ohio river there was and is no distinction in rates on crude and products.

Had the complaining refiners won their contention that the mixture should take the crude rate, they would have saved 1.5 cents per 100 pounds, which, on 3,022 tank cars, each weighing 55,000 pounds, would not have been an insignificant sum.

H. E. Worthington Dies at Sea

H. E. Worthington

PHILADELPHIA, March 9.—H. E. Worthington, formerly president of the Union Petroleum Co. and president of the Tiona Petroleum Co. and the Tiona Refining Co., died March 8 on board the steamer Berengaria at sea. Mr. Worthington was on the way to England and was accompanied by his brother, W. J. Worthington. He was 64 years old.

Marland Man Promoted

HAMMOND, IND., March 6.—Harry J. Kennedy, formerly head of the marketing division of Marland Refining Co., in this vicinity, was promoted recently to manager of lubricating oil sales in the retail marketing department and his headquarters changed from Hammond to Ponca City, Okla. He was succeeded as division manager here by R. H. Grangerfield who has been in the local organization for several years.

New Law Holds up Exploration in Mexico While Present Fields Dwindle

From "The Lamp"

THE present status of the "Mexican question," as the Standard Oil Co. of New Jersey interprets it, is contained in the accompanying articles published in The Lamp for February. The Lamp is the official publication of the company going to stockholders, company executives and so on. The Standard of New Jersey has long been active in development work in Mexico. "The future of the world's second largest producer of oil depends upon the conclusion of a fair working agreement," is the way this article sums up the situation.

THE August 1922 issue of The Lamp was largely devoted to the petroleum industry of Mexico. In that number of the magazine, the stockholders of the Standard Oil Company (New Jersey) were told of the conditions existing in that country. Except for the enactment of the petroleum law by the Congress of the United States of Mexico on December 31, 1925, there has been little change in the situation during the three and one-half years that have passed.

Producing operations have remained limited to lands owned in fee or leased from individuals before May 1, 1917, and all in two districts lying within an area bounded by the Tamesi River on the north, the Tuxpam River on the south, the Gulf of Mexico on the east and on the west by an irregular line extending from the mouth of the Vinesco River through the Otontepec Mountains to the Tamesi. The northern, or Panuco district, produces heavy oil and the southern, an oil of lighter gravity, much better suited for refining purposes. These two developed districts contain about 30,000 acres.

The production of petroleum in Mexico over the past few years has been as follows: 1922, 185,620,000 barrels; 1923, 151,559,000 barrels; 1924, 140,721,000 barrels and 1925, 115,547,000 barrels. The revenues derived by the government from the production and export taxes levied on this oil and its products amounted in 1922 to $43,000,000; 1923, $30,500,000; 1924, $27,500,000 and 1925, $21,000,000, United States currency.

Handicapped Exploration

The above figures furnish striking proof of the statement in The Lamp of August 1922 that the situation of the oil industry in Mexico was critical, due to the progressive exhaustion of known fields which had not been compensated for by the exploration and exploitation of new territory. It declared that "The oil industry will have no future in Mexico unless strenuous efforts to find new fields are undertaken and successfully prosecuted. The areas to be explored are more remote from the ports of shipment than those now producing and the necessary work can be carried through only by the expenditure of a vast amount of new capital.

"It is essential to the permanency of the petroleum industry, as known fields begin to be exhausted, that the reserves for the future be discovered by the extension of operations to other prospective areas. The future of the oil industry in Mexico rests primarily in the hands of the government."

In September, 1924, a committee representative of the oil industry went to Mexico City on the invitation of the government and conferred with the Secretaries of Treasury and Industry in an attempt to arrive at a practical solution of the petroleum problem. An agreement was reached which was subsequently approved by President Calles and the executives of the oil companies.

The plan was essentially a business one, calculated to stimulate and encourage the petroleum industry to extend its activities and make new investments; it was simple in operation and avoided all legal and controversial points. It was understood that the administration would propose and urge the enactment of the legislation necessary to make it operative.

However, early in 1925 President Calles appointed a commission to study the petroleum question and formulate a law for submission to Congress. As a result, a petroleum bill was passed, apparently without reference to the agreement of the previous year, and approved by President Calles and made effective December 31, 1925.

Departs from Agreement

In basic conception and in detail, it departs widely from the agreement made between the oil companies and the Mexican government. It specifically declares that the Nation is the owner of the petroleum in the sub-soil and that its ownership is inalienable and imprescriptible. In thus vesting sub-soil rights in the Nation, it completely destroys all such rights acquired under previously existing Mexican law, without compensation; and herein lies what is known as the Mexican oil problem. Until the adoption of the present constitution, May 1, 1917, the owners of the surface owned the rights to the petroleum in the sub-soil, wherefore they could operate for oil or could lease the property for oil purposes. In other words, the situation was the same as in the United States.

In 1900 Americans first became interested in Mexico as a possible source for crude oil. After ten years of exploration, paying production was secured from land purchased in fee and lands leased for petroleum purposes. The development was normal until the constitution of 1857 was superseded by that of May 1, 1917. Article 27 of the latter nationalized the sub-soil. In 1918 President Carranza attempted to carry the resulting change of ownership into effect and issued decrees that required the companies to recognize the Nation's title and to pay rentals and royalties to the government.

The oil companies immediately instituted amparos (proceedings in the nature of injunctions), on the ground that if the constitution were applied retroactively according to its terms, confiscation of their properties would result. The Supreme Court of Mexico has never rendered a decision in any of these cases.

Carranza Closed Wells

Although Carranza closed the producing wells for a time, the oil companies were eventually, through the support of their own governments, enabled to resume business. Another interruption came in 1921 when President Obregon increased the tax rates to such a point that they were considered confiscatory. This resulted in a substantial cessation of exports until an agreement was reached as to the amount of taxes which the industry could bear.

The new petroleum law provides that exploration for and exploitation of petroleum shall be solely under concessions issued by the Federal government. Companies or individuals who own lands in fee or leases acquired previous to May 1, 1917, may receive "confirmatory concessions," provided application for the same be made by December 31, 1926. If application is not made by that time, the owners are to have no rights as against the Nation.

The law authorizes and directs the President to issue regulations necessary to carry its provisions into effect. Until these regulations are promulgated, the companies will not know what they are to receive in return for the titles acquired under the former laws of Mexico and

now taken over by the Mexican nation.

Clouds Title to Properties

As the law provides for the forfeiture of concessions if regular work is not carried on and the imposts of the government paid, it is evident that even should the owner of preconstitutional oil rights obtain from the government a new grant in the form of a "confirmatory concession," this will be hampered by conditions and limitations wholly inconsistent with the full ownership which he previously enjoyed.

In other words, the petroleum law clouds the title of all proven and potential oil properties acquired by Standard Oil Co. (N. J.) and others previous to May 1, 1917. On this account the Mexican subsidiaries of the Standard Oil Company (New Jersey) have filed new amparo suits and most other companies doing business in Mexico have done likewise. These have been dismissed by the lower courts and now go to the Supreme Court of Mexico.

In regard to lands not the subject of preconstitutional rights, the representatives of the oil companies have sought and obtained an invitation from the Secretary of Industry to express the viewpoints of the industry on regulations now being drafted to carry the law into effect.

During the past three years numerous petroleum surveys of Northeastern Mexico have been made and considerable lands leased from the surface owners along the coast to the north of the present Panuco field and south of the Rio Grande River. Little, if any, drilling, however, has been done in this territory. Whether or not the oil companies will feel justified in investing further large amounts of their stockholders' money in seeking new sources of supply in Mexico will depend upon the regulations issued by the Executive for carrying into effect the provisions of the law. Unless the Mexican government accords the industry its cordial encouragement and cooperation, foreign capital will inevitably be diverted to other countries which give greater security to investments and where conditions are such as to afford a reasonable certainty of a profitable return upon them.

Taxes Are Heavy

During the past year a Standard Oil Company (N. J.), subsidiary, the Compania Transcontinental de Petroleo, S. A., produced 18,073,357 barrels of heavy and 1,079,586 barrels of light crude, or a daily average of both grades of 52,500 barrels. In the same period, the Transcontinental purchased 12,800,000 barrels, an average of 35,000 barrels per day. During the first six months of the past year, the taxes paid Federal, State and Municipal governments of Mexico by the Transcontinental amounted to $4,177,866.37. These taxes increased the cost of each barrel of light crude 41 cents and heavy 24 cents.

The number of persons employed on December 31, 1925, by the Mexican subsidiaries was 1521, as contrasted with 2357 last June. This large reduction was due to decrease in operations caused by the exhaustion of lands whose petroleum rights were acquired from surface owners under the former laws of Mexico and the impossibility of exploiting new holdings of the company. The Transcontinental has been fortunate enough to escape serious labor troubles. The minimum wage paid by it to common labor was four pesos a day. At the beginning of last year, a savings plan was instituted for its employees by which the company adds a certain per cent to the deposits made by them. A majority of the workers participate in the plan and the result of its operations have been satisfactory.

The present production of the Transcontinental is in the neighborhood of 30,000 barrels daily, or about one-third of what it was at the beginning of 1925. The very material decrease of production is largely due to conditions heretofore described which have operated to prevent the Transcontinental from seeking new sources of supply.

It is hoped that when the regulations of the recently enacted petroleum law are promulgated, it will be found possible to extend drilling operations of the company into unproven territories. There is every reason to believe that there are in Mexico new petroleum fields awaiting the drill.

The Standard Oil Company (New Jersey) through its subsidiaries will endeavor to find these, provided the Mexican government encourages it to do so. With the best of luck, however, these cannot be found and production from them put on the market, in less than two years. In the meantime, upon the regulations of the new petroleum law and the attitude of the Mexican government toward the petroleum industry will depend the future operations and the possibility of continuing the efficient organizations now representing the Standard Oil Company (New Jersey) in Mexico.

Analogy of Runner Through Bog Explains Seismic Work

Staff Special

HOUSTON, March 6

HOW seismic exploration is carried forward in the Gulf Coastal salt dome territory has been explained in non-technical terms by Norman H. Ricker, geo-physicist, lately connected with the Humble Oil & Refining Co., in one of a series of lectures before Rice Institute students.

Because of the extent to which this work has been carried in finding salt domes as a preliminary to drilling for oil production in the Gulf Coastal region, his remarks are in part reproduced, as follows:

"Let us suppose that we are in a section of the country where the ground is covered with mud to a depth of 18 inches so that it is very difficult to make any progress through it on foot. Let us suppose, also, that we have a runner, who is willing to run, or make the best time possible, across the country at our command.

"We have used this runner for some time in this place and we know exactly how fast we can travel through this bog. We will suppose for simplicity, that this speed is but one mile per hour in running through this mud, but that upon good hard ground he is able to travel at a fair speed. Now in this section of the country, so heavily covered with mud, any dry, hard patches of ground are naturally very desirable.

"Let us suppose that we want to discover any such patches of firm, hard ground as may exist in this region. The bog is of such a nature that it is impossible for us to enter it ourselves, and we must get our information, then, entirely from our runner. To complete the analogy, we must further assume that it is impossible for us to get any information from him by word of mouth, writing, symbols, or signs, but that we can get this information we desire only by measuring the time required by the runner in traveling from point to point across the bog.

"Suppose now that we set up at selected points a number of stations and permit the runner to run from station to station while we measure the time required by him in doing this. To take an example, let us suppose that two of the stations are a mile apart. If the country between these stations is all bog, it will require exactly one hour for our runner to make the journey. Suppose, however, that he arrives 15 minutes ahead of schedule. There is but one explanation of this early arrival. At some place between the two stations our runner found a patch of good, hard ground along which he could run at a greater speed. We know then that somewhere along this path there exists at least one of these very desirable patches of hard firm ground.

"This, my friends, is the principle by which these seismic parties are able to locate salt domes. As practically all of the petroleum found in the Gulf Coast region is associated with salt domes, our problem of finding possible new oil fields along the Gulf Coast consists in locating these buried mountains of salt.

Application of Analogy

"In seismic exploration the normal earth beneath the surface of the ground replaces the bog, the salt dome replaces the hard firm patches of ground, and for our runner we use a sound wave, which consists of an impulse created by the

explosion of a rather heavy charge of dynamite. The wave produced by this explosion travels into the earth in all directions. Its path is bent in passing into the various subterranean beds and some of the waves are finally bent upwards and eventually again reach the surface at some remote point.

"As these waves reach the surface of the ground they produce a slight tremor or shaking of the ground. At selected points at known distances from the explosion the instruments are placed which magnify these small tremors so that the arrival of the waves may be detected. These instruments are called seismographs. In general practice these instruments project a beam of light upon a strip of photographic paper which moves slowly along so that a straight line is traced upon this strip of paper. When a seismic tremor arrives at the instrument the spot of light moves violently to and fro, tracing a wavy line upon the paper.

"On this same strip of paper must also be recorded some signal to indicate the instant when the explosion took place. The paper must move very uniformly at a known speed, so that the time between the explosion and the received wave may be determined by the distance along the paper strip between the signal recorded by the explosion and the arrival of the seismic wave, or else a series of dots must be made along the paper at equal short intervals of time so that by counting these dots the time of propagation of the wave may be determined.

"After a number of experiments we learn the time required by the wave in going from shot to seismograph for various distances between the explosion and and the seismograph. We can predict therefore, how long this time should be if we know the distance and the earth beneath the surface is perfectly normal.

Travel of Wave Varies

"Should a salt dome or buried mass of rock be at some place along the path of this wave, the wave will arrive at the seismograph ahead of the time predicted, for sound travels faster in salt or rock than it does through ordinary ground. It can then be seen readily how we are able by this method, to detect the presence of these buried mountains of salt.

"After we have determined the existence of some buried mass of salt or rock, numerous detailed shots must be made in this vicinity in order definitely to determine the location, outline and depth of the mass in question. There are, of course, numerous methods and calculations involved in these detailed shots which are guarded as professional secrets and, therefore, cannot be discussed here, but the method itself for detecting the presence of the domes, is, as you see, a very simple one. The various concerns engaged in this work use slightly different instruments but the method itself is the same.

"In order to record the instant of the explosion on the record, American parties make use of portable radio sets by means of which this time may be transmitted almost instantaneously. The Germans say that they use the sound through the air, which arrives after the wave through the ground, but from which the instant of the explosion may be calculated from the known distance and the velocity of sound through the air after making the necessary corrections for temperature, humidity, wind direction and velocity and any other minor corections that may be necessary.

"Whenever better accurarcy is necessary they transmit the time of the explosion over a wire, electrically, and in this case the precision is as good as with the American radio transmission."

Conservation Board to Get Out First Section of Report Soon

By Special Correspondent

WASHINGTON, March 8

THE Federal Oil Conservation Board has determined to divide its work into three parts and devote a volume to each, in making its report to the president and to congress. The first, it is planned shall be made before the end of this session, congress leaders are planning to get away from Washington late in May or early in June. That means, if the oil board is successful the first of three parts of its report on its investigation will be in hand before the beginning of summer.

The first volume will be devoted to domestic conditions, production, refining, consumption, legal restriction both state and national, and the development of government and private lands.

Foreign oil situations as they relate to American interests will be carried in the second volume. In connection with that it is pointed out in a statement on the subject, that this government imports and exports vast quantities of petroleum, its products and by-products. The report will point out that American oil companies are going into foreign fields in increasing number each year and that millions are being invested in concessions, franchises, the drilling of wells and the purchase of huge quantities of machinery. Mexico, South and Central America, Germany, France, Rumania, Italy, Egypt, Persia, Africa, Russia, Turkey, the Dutch East Indies and Africa today hold interest for the American oil companies, the Board thinks.

"With the known and potential domestic supply of petroleum in the United States estimated to a certain degree," says the statement to which reference has been made, "it is imperative to know the potential oil resources of foreign fields in which American capital has been invested, and what conditions prevail and what part this government must take in the encouragement and support of American nationals abroad. The problem is so vast and the ramifications so far-flung that the board has concluded that a separate and distinct report is essential if the subject is to be properly and thoroughly treated."

The third volume or report, Dr. Work says, will deal with possible substitutes, whether the oil shale industry can be profitably and effectively developed, whether coal can be used as a substitute, whether other mineral substances can be converted to fuel uses in place of crude oil and gasoline.

The oil shale development in this country, says the statement, has commanded the attention of the board to a point where it is desired to make a complete survey of mining costs, quality of oil produced, the various elements entering into oil shale operations, such as availability of shipping points, machinery required, time consumed and other facts about the matter.

"This problem of substitutes is one that demands careful study, and the board," said Dr. Work, "is desirous of covering the situation in detail."

Because President Coolidge approves re-appropriation of the $50,000 given the board a year ago to carry on its work, the Bureau of Budget has sent a recommendation by Secretary Work, chairman of the board, for a continuance of the money allowance. That is necessary because whatever balance there may be of the original $50,000 grant on June 30, it goes back into the treasury unless re-appropriated. Inasmuch as the board got along a whole year without spending any part of that allowance, services of men already on the pay roll being utilized, there is hardly any doubt about the continuance of the appropriation.

Clean Station Gets Business

BELLE PLAINE, MINN.—A clean and well kept service station, on which favorable comments have been made by motorists, is in part responsible for the increasing business of The Moba Oil Co., Inc., which is operated by Walter E. Moore and Paul J. Backes.

The office and ladies' rest room is kept in the best of condition at all times and this has been appreciated by tourists and local motorists according to J. A. Schoell, secretary.

A new inside wash rack with hot and cold water has just been installed on which the customer can either wash his own car or have it done.

An easily remembered telephone number is another item that has helped business, Mr. Schoell states, it being 123.

The trunk highway on which the Moba station is located, will be paved this summer.

Consider Standardizing Domestic Oil Fuel

CHICAGO, March 8.—Underwriters' Laboratories of Chicago, the institution that has played such an important part in the oil burner industry over the past three years, is now making an attempt to work toward the standardization of oils commonly required in the use of domestic oil burners. It has been hinted at the Laboratories' office, 207 East Ohio st., that certain definite recommendations may be offered to the next meeting of American Oil Burner Association.

Manufacturers and marketers of oil burners, both domestic and industrial, are all organized under one head in the A. O. B. A. The association convenes next in Detroit, Mich., at the Book-Cadillac Hotel, on April 6, 7 and 8. Underwriters' Laboratories will have representation there as the institution usually does at these meetings. The recommendations of this research institution are going to be interesting to men in the oil trade also.

Fuel specifications for domestic burners have been a mutual problem of the oil refiners and burner manufacturers since the burner became a factor in home heating (about 1923) and started offering a market for oil. Two or three years ago this mutual problem was a bone of contention between the oil jobbers and the burner agencies in some cities. The burner men said the oil men ought to sell an oil to suit their burners, and the oil men said the burner men ought to sell a burner that would satisfactorily burn their cheaper oils.

Since those pioneer days in the domestic heating business, a group of the best minds in both industries have gotten together at odd times greatly to the benefit of the oil consuming public. Gradually good burners have come into use that will handle a fairly heavy oil without steam pressure to vaporize it. And in the mean time the oil jobbers have learned to blend domestic fuels to the specifications of particular burners and deliver them at a price within range of the consumer's purse.

The work of Underwriters' Laboratories was not a commercial effort. It was in the interest of public safety. The public and the insurance companies became keenly interested in knowing what was good practice in the construction and installation of domestic oil burners as soon as they became well advertised. In the absence of valuable experience in this new business there came a demand for reliable opinions on such equipment. So to Underwriters' Laboratories, "maintained for service, not profit, by the National Board of Fire Underwriters," was the logical place to go.

At the close of 1922 Underwriters' Laboratories had a list of five oil burners which they had tested and found to be built in full compliance with underwriters' standards of safety. Owners of homes preferred to install burners so listed because they considered the listing an assurance of safety and listed burners enjoyed a desirable distribution. At the close of December, 1925, the list had grown to 37 with a number of other good burners in process of examination.

In testing all these machines for safety the men in charge of such experiments at Underwriters' Laboratories have been obliged to watch their oil fuel closely. They buy their oil in steel drums by special arrangement with Chicago distributors, keeping the oil carefully classified as to specification. They have a sample of every drum tested by a chemist for gravity, viscosity, flash and cold test, and in testing a burner they use the lowest grade that its manufacturers claim it will consume.

H. L. Pagett, associate engineer in the gases and oils department, says there often is a wide difference in the specifications of oils bought for use in laboratory experiment even where an effort is made to buy oil of as near the same grade as possible. Oils alike in gravity may be widely different in other respects.

In the laboratories' work toward standardization of oils commonly required, contact is being maintained with the American Oil Burner Association and a sub-committee of the committee on flammable liquids of the National Fire Protection Association. Examples of trouble with domestic burners, traceable to the use of oils for which the burners were not intended, have been tabulated now over a period of several months. The results obtained thus far, the authorities say, have not furnished enough information to permit drawing of final conclusions.

Just what the procedure will be can not be announced yet. It is not assured positively that there will be any recommendations to burner men made in Detroit in regard to standardization of fuels. At that meeting, however, the first development in that particular line of research may be announced.

Tide Water Wins Third Prize Advertising

NEW YORK, March 5.—Third prize among the eight 1925 Harvard advertising awards established by Edward W. Bok, formerly editor of the Ladies' Home Journal, for the best advertising campaign conducted by manufacturing concerns or advertising agencies in the country, was won by the Tide Water Oil Sales Corp., 11 Broadway. This was for the best local campaign of a manufacturer.

At a dinner on Feb. 22 at the Advertising Club of New York, the awards were presented by the Harvard Business School, to which school advertisements and details of advertising campaigns were submitted between Oct. 1, 1924 and Dec. 31, 1925. A jury of nine men selected the eight winners.

The Tide Water campaign which won the award was that known as its sealed gasoline campaign. To prevent the sale of other gasoline through its pumps in dealers' hands the company put locks and seals on its tanks and then started a newspaper advertising campaign to sell both its reputable dealers and the public on the locked tank feature as a protective measure. A story on this was published in the October 14, 1925 issue of National Petroleum News. The Joseph Richards Co., Inc., New York, was the advertising agency handling the campaign.

Issue New Report On Lance Creek Field

CLEVELAND, O., Mar. 6.—The new Bureau of Mines report on petroleum engineering in the Lance Creek, Wyo., field is now being distributed. It is the work of K. B. Nowels, petroleum engineer, and E. J. Dewees, assistant petroleum engineer, of the Laramie office of the Bureau.

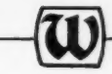
There is considerable study given in this report to the results of drilling into the Lakota formation in Lance Creek and the future possibilities, as revealed by a study of what has been done. The report contains a complete list of wells drilled, describes the various phases of development and production in the field and makes recommendations on eliminating the water trouble that now exists.

The report was published in a cooperative arrangement between the Bureau of Mines and the University of Wyoming in order to make it available early. Because of the large number of illustrations which were made, a charge of 75 cents per copy is made. Orders should be addressed to the University of Wyoming, Laramie, Wyo.

New Dubbs Units Being Installed

CHICAGO, March 6.—The Universal Oil Products Co. states that the Shell Co. of California has ordered four Dubbs units for immediate construction at its Martinez plant, where there are five already in operation. It is also stated that the Shell has four Dubbs units in operation at its Wilmington refinery and four more are to be completed within a month.

The Producers & Refiners Corp., which has 10 Dubbs units at its Parco, Wyo., refinery and four at its West Tulsa refinery, is building two more at the latter plant, according to the statement of J. G. Alther, secretary of the Universal Oil Products Co.



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Wheaton

Flowing Life of Wells May Be Prolonged by Reduction of Gas Factor

By A. F. Hinton
N. P. N. Staff Writer

TULSA, Mar. 6

At last night's joint meeting of the American Society of Mechanical Engineers and the American Institute of Mining and Metallurgical Engineers, an interesting discussion took place on the subject of the proper ratio of gas to oil in flowing wells. The discussion was led by K. C. Sclater, assistant petroleum engineer, U. S. Bureau of Mines, who recently has made numrous experiments in California along the line of prolonging flow of wells by reducing the gas factor to its lowest economical point.

L. G. E. Bignell, of the Parkersburg Rig & Reel Co., and chairman of the Mid-Continent section of the A. S. M. E., presided.

The gas factor of a well was defined by Mr. Sclater as the number of cubic feet of free gas produced with each barrel of oil. This gas factor usually is very large in the early period of a well's life, when it is in the flush production stage and when the well is making much more gas than is needed to lift the oil. Regulation of the gas flow by the application of back-pressure, reduction of diameter of flow lines or other methods, tends to bring the gas flow down to the point where it is just sufficient to flow the well, resulting in a conservation of gas which in turn results in considerable prolongation of the well's flowing period.

Means a Greater Recovery

"A reduction of the gas factor over a whole field or sometimes in one well has some significance," said Mr. Sclater. "If the minimum volume of gas, consistent with economy, is produced with each barrel of oil, thus efficiently utilizing the expulsive energy of the gas, the life of the field as a whole is conserved and a greater ultimate recovery of oil will result. From an operating standpoint, the flowing life of the well is lengthened, with a resulting decrease in lifting cost."

In order to show that the idea of reducing the gas factor as a means of prolonging flowing life of wells is not a new one, he quoted from an authority who wrote some nine years ago, as follows:— "While the operator cannot control the original conditions of energy and resistance in the sand, he can partly control the efficiency of expulsion. As it is the energy contained in the compressed and absorbed gas rather than the oil that is exhausted, it is but logical to judge the efficiency of a producing method largely by the relative quantities of gas produced with each barrel of oil. If, by a change in method, the producer lessens the proportion of gas with each barrel of oil, he should increase the total recovery of oil correspondingly, even if the ratio of production is temporarily reduced somewhat."

Neighbor May Interfere

The speaker pointed out that only scant attention has been given to the problem of producing oil at the most economical expenditure of gas, and this in spite of the fact that it is known that profitable results can be obtained through regulating the gas factor. He explained the apparent apathy by saying that where one operator may desire to conserve gas pressure by lowering the gas factor, the operator on an adjoining property probably will be concerned chiefly with obtaining maximum oil production in a minimum of time, regardless of the volume of gas produced with the oil.

Mr. Slcater urged that as soon as first wells are drilled in a field their producing characteristics be investigated in order that their correct gas factor be established before a great deal of the gas has been dissipated in uneconomical operation. The ultimate volume of oil which can be profitably recovered from an area is contingent on the character of the natural expulsive forces underground, and the character of these forces should be the controlling factor in a choice of producing method. Inasmuch as gas pressure is the dominant natural expulsive force in most fields in the Mid-Continent, it follows that the most efficient methods to adopt are those in which the smallest volume of gas, consistent with economy, is produced per barrel of oil.

Experimenting is Justified

Experimental work on new wells usually is beneficial and will justify extra expense involved in the work—although the speaker pointed out that it is not always possible to make the superintendent or executive see the matter in this light. Before starting experimental work on a well, all available information about the well should be gathered and given close study. This information should include drilling history, thickness and arrangement of productive sands, rock pressures, casing points, perforations and liquid levels. Every field and indeed often every well has producing characteristics peculiar to itself, so that methods proved beneficial by experiments in one field would not necessarily apply to any other field.

"There are so many variable factors and unforeseen conditions influencing oil production from a well," the speaker continued, "that we cannot afford to overlook any reliable index from comparing the efficiency of production methods in use. In the gas factor we have such a reliable index. The magnitude of the gas factor under present producing methods is largely dependent on local conditions, such as the relative volumes of gas and oil present, whether the gas is free or occluded in the oil, the disposition of the oil sands, depth of the well, size of the casing or tubing, and, perhaps to some extent, the gravity and temperature of the oil. The gas factor may be anywhere from 400 cubic feet or less in old pumping wells to 6000 cubic feet or more in flowing wells. A fair average gas factor probably would be around 1800 to 2000 cubic feet per barrel of oil produced."

The gas factor of a well does not remain constant under present methods of production. As the sand becomes depleted of oil more energy is required to move the oil to the well and there is also a greater tendency to by-pass the gas through the sand; hence, the gas factor may increase with the age of the flowing life of the well.

When Factor is Low

As the gas pressure in a new well diminishes, a point will be reached where the gas will not be sufficient to maintain a steady flow of oil. At this point, the well starts flowing by heads. As the pressure and volume of the gas diminishes still further, the interval between heads will increase and the intensity of flow decrease, until finally the well fails to flow at all. Then this period in the life of a well is reached, a pump is installed, and the well's flowing life presumably is ended. If accurate measurements of the quantities of oil and gas produced are made, it will probably be found that the period of greatest efficiency of production while flowing, that is, the period when the gas factor was lowest, was that during which the well flowed by heads.

In a well's first period, that of steady but vigorous flow, there is an excess volume of gas under high pressure, sufficient in amount to energize the column of oil in the casing and with a large amount of slippage and by-passing of gas through the oil, thereby resulting in a high gas factor. In its second period, that of flowing by heads, there is a slow surging or heading of the fluid column in the well and by-passing of gas through the oil is reduced, thereby resulting in a low gas factor.

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Value of Systematic Shooting Shown By Results In Red River Field

By H. B. Hill
Petroleum Engineer, Bureau of Mines

THE rate of production and the ultimate recovery of oil have been materially increased by the systematic and careful shooting of wells in the west Red River oil field, Texas-Oklahoma boundary. Although shooting of oil wells to increase production is probably the oldest and most widely used method of stimulating production, little precise information is available regarding the conditons involved and the results obtained.

The purpose of this paper is to discuss the shooting of 25 wells on one property and the results obtained. Seven of the wells were shot twice and three of them three times, making a total of 38 shots. As separate production records were kept for each well, it is possible to study the results of shooting with a great deal of satisfaction and confidence.

The West Red River oil field in the Burkeburnett district is approximately eight miles west of the town of Burkburnett, Texas. The wells under consideration are located in the bed of the Red River between the medial line and the south bank of that river. (see Fig. 1.)

Complete and accurate data are essential in working out the subsurface conditions of an oil field. The value of cross sections based on well locations, derrick floor elevations, and the drilling records, is entirely dependent upon the accuracy, care and skill with which these fundamental data were taken and recorded.

Two sets of cross sections, one north-south and the other east-west, were drawn so that each well appeared on at least two cross sections and was correlated in four directions. Correlation and structural contours were made on the top of the oil sand. It was especially desired to locate the top of the sand as accurately as possible in order to determine the proper place for the shots and also to study the effects of shooting in different parts of the sand.

Cross section A-B, Fig. 2, is typical of a number of cross sections made. Only the bottom part of the hole was used in making the sections as the upper portions of the logs proved valueless for correlating purposes. In constructing these sections vertical and horizontal scales of 20 and 250 feet to the inch, respectively, were used; consequently the dip of the structure is exaggerated 12½ times. In fields of this type where the dips are low and the pay strata comparatively thin, a slight variation in the depth of a well or position of a shot may be the difference between profit and loss. To show these slight differences in depth a large vertical scale is necessary.

The author of the accompanying article is the engineer in charge of the Dallas office, Bureau of Mines. He was in position to make a detailed study of the re-shooting work carried on in the west Red River, which for a considerable time was operated directly by the government, pending adjudication of claims. The results of Mr. Hill's study were presented to the petroleum division, American Institute of Mining and Metallurgical Engineers, at the annual meeting in New York, Feb. 15-18, such presentation being by permission of the director, Bureau of Mines. The publication here is in part. The complete text will be later published by the A. I. M. E.—EDITOR.

The average thickness of the pay sand is 27 feet as determined by the cross sections. The upper part of the sand is approximately 17 feet thick and contains oil with considerable gas, and is logged in the different wells as sand, shale, and sandy shale. The lower part of the sand is approximately 10 feet thick and is the more productive. Shooting in this part of the sand gives the best results.

The history of each well was drawn graphically as illustrated by Figs. 3 and 4. The production decline curves for the separate wells are based on the average daily pipe line runs by months for the complete life of the well up to November, 1925. The daily production figures used in constructing the curves were obtained by dividing the monthly pipe line runs by the number of days in the month the well actually produced.

The three production curves of well No. 204 shown on Fig. 3 are not typical curves for the field and they do not reflect the average increase expected from shooting. This diagram was selected from 25 such daigrams to show the

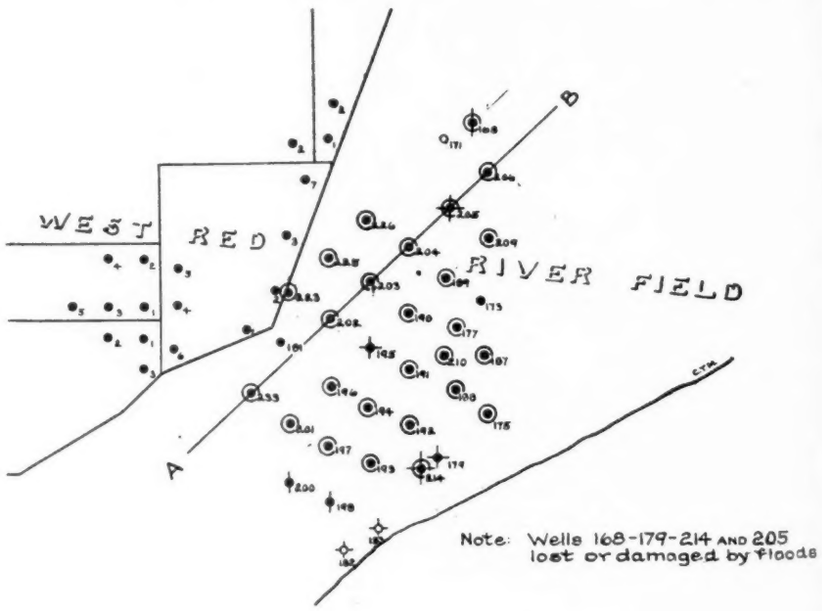


FIG. 1 — Sketch map showing location of wells shot for which individual production records were available in observing the effects of shooting. A vertical section (Fig. 2) was made through wells indicated by line A–B.

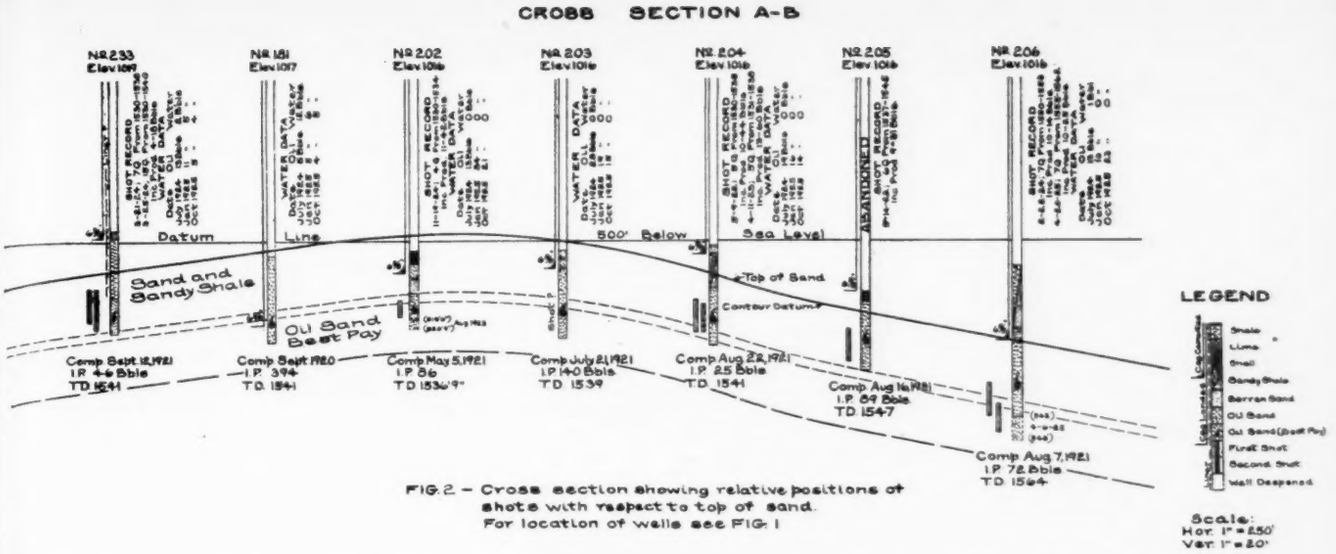


FIG. 2 — Cross section showing relative positions of shots with respect to top of sand. For location of wells see FIG. 1

method used in plotting the work and the results of two small shots 13 months apart, but each fired at approximately the same position in the sand. The estimated increase in production due to the first shot, for the years 1922 and the first four months of 1923 (difference between curves one and two, Fig. 3) amounted to 6700 barrels; while the increase in production resulting from the second shot (difference between curves two and three) amounted to 18,000 barrels. Thus, the estimated total increase in production resulting from the two shots for the years 1922 to 1925 inclusive, amounted to 24,700 barrels. The small initial production of 25 barrels and the results later obtained in shooting, now suggest that this well was stopped in the upper part of the sand and that the production history would have been entirely different had the well been drilled five to ten feet deeper. This curve illustrates the individuality of each well and the value of accurate records which can be used in planning the field operations.

The partial graphic log, showing the mechanical condition of the well, was placed opposite the production record for purposes of easy comparison and quick reference. Such a sketch, to be of maximum service in the field, should show the important data, such as casing, shooting, formation record, total depth, derrick floor elevation, and correlated top of sand, and not be complicated by depicting unessential data.

The history of well No. 202 is shown in Fig. 4. This well was completed on May 5, 1921, at a depth of 1534 feet. The average daily production for that month was 86 barrels. During August, 1923 the well was cleaned out and deepened to 1537 feet, and the daily production increased from 20 barrels to 33 barrels. On Nov. 19, 1924, the well was shot with four quarts of nitroglycerin and the daily production increased from 11 barrels to 42 barrels. The daily production gradually declined from the peak of 42 barrels for February 1925 to 21 barrels for November 1925.

The estimated increase in production resulting from deepening was, 1500 barrels, as compared to 7700 barrels for the year 1925, obtained by shooting. Wells No. 202 and No. 204 are shown on the vertical cross section A-B, Fig. 2.

The estimated increase in production by wells is given in Table 1. The increase was found by subtracting the estimated yearly production calculated by extending the average decline curve from the actual yearly production. This increase for the three years, 1923, 1924 and 1925, is estimated at 204,900 barrels, itemized as follows:

Shooting	152,300 Barrels
Deepening	12,500 Barrels
Shooting and Deepening	40,100 Barrels

The relative value of the work done on each well such as shooting, deepening, and shooting and deepening, is reflected by the production figures shown in Table 1.

For example, the production of well No. 177 for 1922 was 7700 barrels. This well was deepened five feet in 1922 and the production increased to 9300 barrels for 1923. The well was again deepened and shot during the latter part of 1924 and the production increased to 9500 barrels for the year 1925. In other words, the well produced 200 barrels more in 1925 than in 1923, and 1800 barrels more than in 1922.

Well No. 190 produced 15,800 barrels during the year 1923. On March 13, 1923, this well was shot with seven quarts of nitroglycerin and the production increased to 27,100 barrels for 1924, and 17,000 barrels for 1925. The production for 1925 was 1200 barrels more than for 1923.

Cost of Work and Value Thereof

The monthly pipe line runs from 17 wells for the full month before shooting and covering the period from 1922 to July 1924, was 8739 barrels. The pipe line runs from these same wells during the month they reached the peak production after shooting, was 24,625 barrels, or a total monthly increase of 15,886 barrels; or an average daily increase of 31 barrels. The average monthly increase based on monthly pipe line runs to 22 wells before and after repair work, from July 1925 to Novebmer 1925, was 9177 barrels, or an average daily increase of 14 barrels per well. The total cost of labor and shooting of 22 wells was $10,622.00, or an average cost per well of $483.00. Equipment and men were available on the lease for cleaning out work. The following figures were taken from the monthly financial statements, and they reflect the value of the increased production. These figures cover the period from July 1924 to November 1925:

The total credit, i.e., sales value of oil less operating expenses, to 22 wells for the calendar month before shooting was $4,360.00, as compared to $21,879.00 credited to the same wells for the month in which the wells reached their peak production after shooting.

The average value of the increased production in dollars credited to the wells is, therefore, $796.00 per well per month. The total pipe line runs from these wells for the month before shooting was 5,250 barrels, or a daily average of 8 barrels per well. The average number of days off production was nineteen. The estimated amount of production lost during the shut down period is 152 barrels per well, or $228.00 based upon an assumed value of $2.00 per barrel, less fifty cents per barrel, operating cost. The estimated cost of cleaning out, shooting and value of lost production is, therefore, $711.00; or based on the results of 22 wells the average well on this property to date has paid back the cost of repairing in less than one month.

Conclusions

The best results have been obtained from wells shot in the lower part of the pay. This fact emphasizes the need for detailed subsurface study and a knowledge of the sand and water conditions. The small sized shots, four to seven quarts, correctly placed have given better results and are more effective than larger shots placed in the open hole without regard to or understanding of where to shoot.

The size of shots varied from three quarts to ten quarts. However, the average size of the first shot was six

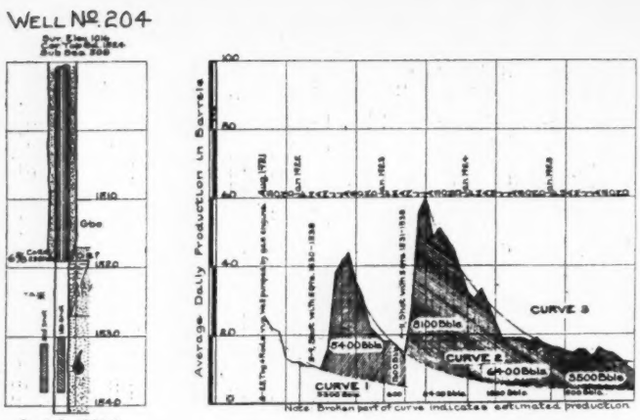


Fig. 3— Chart illustrating method used in working up the individual well histories. The production decline curves showing effects of shooting wells are based on average daily pipe line runs by months.

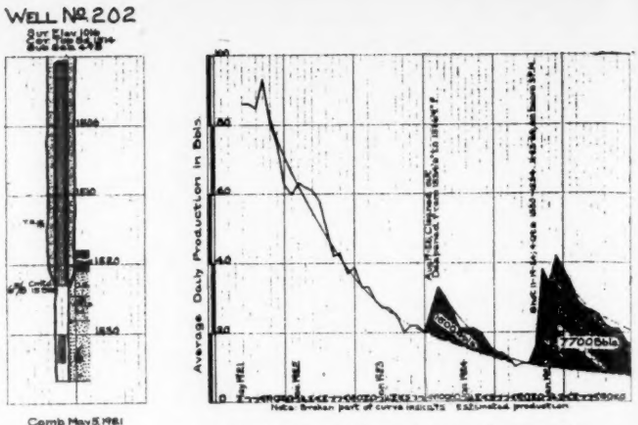


Fig. 4— Chart showing increase in production resulting from deepening and later shooting. For location of well on structure see section A-B, Fig. 2.

quarts. The area in which the wells are located consists of approximately 170 acres. The largest number of producing wells at any one time was 31, or one well to each 5½ acres. The locations were staggered, each well being located at the vertices of an equilaterial triangle and approximately 450 feet from each of the six offset wells. The estimated ultimate recovery for this area is 2,203,000 barrels or approximately 13,000 barrels per acre. The wells have been gradually deepened and stimulated by light shots, which method has no doubt assisted in conserving the natural gas and thereby reducing the oil-gas ratio.

During October 1925, this group of wells (Table 1) produced 10,870 barrels of oil and 7320 M cu. ft. of gas, or 673 cubic feet of gas per barrel of oil. During October, 1922, the oil produced was 33,248 barrels and the gas production was 21,950 M cubic feet, or 660 cubic feet of gas per barrel of oil.

It has been the practice on the lease to set the working barrels high and to keep the sand covered with oil; also to apply a small vacuum, equivalent to three to five inches of mercury, at the casing-head. In November, 1925 the fluid stood approximately 50 feet above the bottom of the hole and could readily be bailed down below the bottom of the casing before shooting. The controlling factors contributing to the successful shooting of wells in this area are: Conservative well spacing; small amount of water; application of low vacuum; pumping high enough to keep productive part of sand covered with oil; presence of gas with oil; and a study of the subsurface conditions.

Table 1—Estimated Increase in Production Resulting from Method of Operation

Well No.	Estimated Production as of—No Shooting or Deepening Based on Individual Well Curves (Barrels)			Actual Production Pipe Line Runs (Barrels)			Estimated Increase in Production: Years (Barrels)			Shooting Barrels	Deepening Barrels	Shooting and Deepening Barrels
	1923	1924	1925	1923	1924	1925	1923	1924	1925			
168				3,400	*							
173				13,800	7,500	††2,300						
175			4,000	10,500	6,700	4,200			200	200		
177	4,000	3,400	3,500	9,300	6,500	9,500	5,300	3,100	6,000		6,700	7,700
181				7,000	1,700	1,300						
187	15,000	11,000	7,800	18,700	17,200	9,800	3,700	6,200	2,000			11,900
188			800	5,000	1,600	3,200			2,400	2,400		
189		6,600	4,800	9,800	11,500	11,800		4,900	7,000	11,900		
190		7,100	5,000	15,800	27,100	17,000		20,000	12,000	32,000		
191		4,400	3,000	8,000	5,500	11,000		1,100	8,000	9,100		
192			3,400	20,000	7,000	6,000			2,600			2,600
193			2,200	9,200	3,900	2,500			300	300		
194			5,900	15,800	10,500	8,900			3,000			3,000
196	4,000	2,200	1,900	8,300	4,300	7,900	4,300	2,100	6,000		4,300	8,100
197		1,500	600	4,000	1,800	2,100		300	1,500			1,800
198				100	**							
200				500	***							
201				1,500	500	‡						
202	7,300	4,800	3,000	8,600	5,700	10,000	1,300	900	7,000	7,700	1,500	
203	7,700	4,400	3,300	18,100	10,700	5,800	10,400	6,300	2,500	19,200		
204	3,000	1,800	1,500	12,400	8,200	5,000	9,400	6,400	3,500	19,300		
205	3,600			6,500	†		2,900			2,900		
206		2,900	2,100	3,800	3,900	5,300		1,000	3,200	1,200		3,000
209		1,500	1,500	1,700	2,700	3,200		1,100	1,700	800		2,000
210			5,200	24,700	14,000	6,200			1,000	1,000		
214			3,800	11,700	9,100	‡‡4,800			1,000	1,000		
223	9,100	5,800	4,800	22,900	27,700	9,800	13,800	21,900	5,000	40,700		
225			4,100	7,700	6,400	4,700			600	600		
226				800	1,000	900						
233		2,200	1,500	4,300	3,400	2,300		1,200	800	2,000		
Total				283,900	206,000	155,500	51,100	76,500	77,300	152,300	12,500	40,100

Total estimated increase in production for three years..... 204,900 Barrels

*No. 168—Damaged by flood, October, 1923
**No. 198—Temporarily abandoned.
***No. 200—Temporarily abandoned.
†No. 205—Damaged by flood, October, 1923
††No. 173—7 Months prod., down for repairs
‡No. 201—Temporarily abandoned.
‡‡No. 214—Destroyed by flood Sept. 1925, 9 months production.

No More Rail Service For Garber Field

WASHINGTON, March 8.—The Garber field will not have any increase in its railroad facilities, in accordance with the plans of the St. Louis-San-Francisco, unless the Interstate Commerce Commission disregards the recommendation made to it by J. W. Shutrumph, the examiner who digested the testimony given to the Oklahoma Corportion Commission on the application of the Frisco to be allowed to build a six-mile extension into that field. The examiner said that public interest did not require the extension, which was avowedly advocated by the Sinclair Oil & Gas Co. and for which the Roxana gave testimony to show how much of a benefit the industry would receive by reason of that extension.

Opposition to the new construction was voiced by the towns of Garber and Covington and the Rock Island. The municipalities said they were afraid that if the Frisco were allowed to build into the field, a rival town would spring up nearer the actual drilling and deprive them of "their legitimate trade" consisting of oil well supplies and other things now hauled out by trucks. The Frisco estimated the extension would cost $146,000 and that the gross income from it for a period of seven years, would amount to $200,000 annually. After seven years it admitted it was problematical what the revenue would be.

Indiana Jobber Changes Name

FORT WAYNE, IND.—The name of the Anthony Oil Co., with main offices here, was changed on Feb. 1 to O'Day Oil Co. The management, policies and the entire organization remain the same, with the change made in name only.

The Anthony company started in the oil business in 1920 with two empolyes and 60,000 gallons storage capacity and one truck for deliveries. Today it has 170,000 gallons storage, 37 employes and 50 resale agents and has a fleet of 17 trucks besides bulk distributing stations at Fort Wayne, Auburn, Ossian, Columbia City and Peru, all in Indiana.

Several Wildcat Showings of Interest as Oklahoma Production Declines

By A. F. Hinton
N. P. N. Staff Writer

TULSA, March 6

FOR the first time in six weeks, Oklahoma production recorded a decline during the week just closed, when it dropped off a little more than 200 barrels. Changes in various fields were slight, with most of them tending downward, the largest difference having been a gain of about 1000 barrels at Braman. The five-week period of increasing production brought the state's output up from 442,145 barrels to 455,080 barrels daily. This increase is in reality inconsequential when it is remembered that Oklahoma was producing just about 500,000 barrels a day last November and has no present prospects of getting back to anywhere near that figure in the near future.

Events of the past week included the opening of what may prove to be a new field in Seminole county, 10 miles from production, the near completion of two wells in the Fairfax pool, or south end of Burbank, a wildcat showing in Noble county, another near Covington, south of the Garber field, a big well in the Turkey Mountain sand in old shallow territory near Tulsa, a good well or two in the Braman south pool, and continued large production from the four wells in the new Ingalls pool, Payne county.

The new Seminole county well is that of the Indian Territory Illuminating Oil Co., in the NWc SE of 24-9-6, about three miles northeast of the town of Seminole, some 15 miles northwest of the Wewoka field and the same distance southeast of Cromwell. This new well was reported today to be flowing at the rate of 960 barrels daily at three feet in sand topped at 4006 feet. The well caused some excitement several weeks ago when it had oil showings from upper horizons, but these were not large enough to make a commercial well and the hole was drilled on down.

New Wells at Fairfax

In the Fairfax pool, Osage county, generally believed to be a south extension of the Burbank field, the Prairie Oil & Gas Co. is completing its second well and has its third one on top of the sand to be drilled in in a day or two. This company's No. 3, in the SEc SW SE of 21-25-6, a location east of the discovery well, is in the sand from 2675 to 2707 feet and made 120 barrels yesterday, after which it bridged and ceased flowing. It will be cleaned out and shot.

The same company's No. 2 on this farm, a location north of the discovery, had top of sand at 2692 feet, where it had a small showing of gas. It is now running a liner to top of sand, and will drill in when this has been completed. The Prairie discovery well, which is located in the SWc SE of 21, is flowing 380 barrels daily. The sand record of this well was top at 2677 feet, oil at 2698 feet and total depth 2722 feet.

In the vicinity of the Prairie wells, several other tests are getting down to the point where they will be at interesting depths in a short time. One of these, Phillips Petroleum Co. No. 1, in the NWc NE of 28-25-6, a south offset to the first Prairie well is drilling at 2106 feet. It set the 12-inch casing at 905 feet and the 10-inch at 1234 feet. This company's No. 2 on this farm, in the NEc NW NE, set the 10-inch casing at 1112 feet and was drilling at 2005 feet at last reports. Indian Territory Illuminating Oil Co. No. 1, in the NEc NW of 28, southwest diagonal offset to the discovery well, was drilling at 2104 feet. It set the 10-inch casing at 1150 feet. Sinclair Oil & Gas Co. lost the hole in its No. 2, in the NEc SE SW of 21, a west offset to the Prairie No. 2, skidded the rig 35 feet north and is now spudding on a new hole.

In the Burbank field proper, Phillips Petroleum Co. completed a good well during the week offsetting one of the tracts to be offered at the forthcoming Osage sale Mar. 17 and 18. This well, No. 15 is located in the NWc NE SE of 27-27-5 and is an offset to the south line of tract No. 584, comprising the NE¼ of the section. The Phillips well is in the sand from 2918 to 2944 feet, and made 857 barrels the first 15 hours after reaching this depth.

Ingalls Pool Production

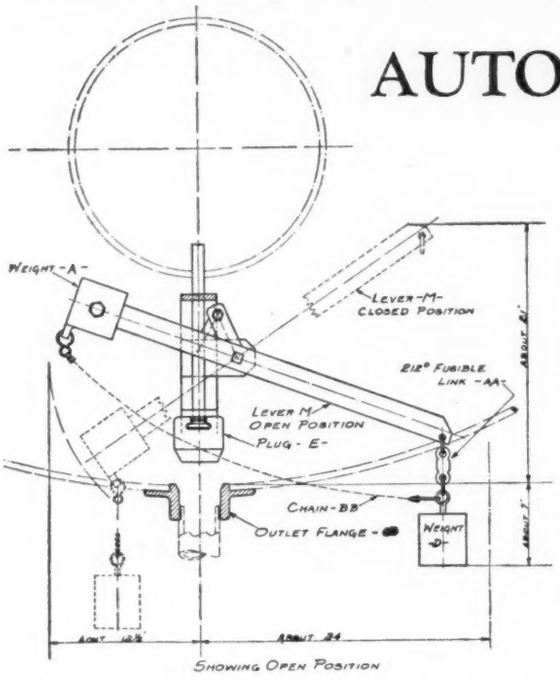
In the new Wilcox sand pool near the old townsite of Ingalls, Payne county, four wells are producing 6494 barrels daily, an average of more than 1600 barrels each. During the week, the Roxana petroleum corporation deepened its No. 1 Stover three feet to total depth of 3729 feet, and increased its production from 1960 to 2230 barrels. This well is located in the swc of 13-19-4 E. The Olean Petroleum Company has the three remaining producing wells in the field. This company's No. 1 Pleasants, in the nwc of 24-19-4, is flowing 1561 barrels. Its No. 1 Richardson, in the sec of 14, is making 1667 barrels, and its No. 1 Farren, in the nec of 23, is producing 1036 barrels.

In the Garber district, an interesting semi-wildcat is that of the Pender Petroleum Co. No. 1 Clock, in the nwc sw sw of 4-21-3 W, near the town of Covington, and some two and a half miles south of the south end of production in the Garber field. This well, which was reported several weeks ago, as showing one million feet of gas and having made several flows of oil from sand topped 2267 feet, is now estimated a 50-barrel well. At the time the showing was found, the well had 400 feet of open hole and it was necessary to run a string of 5 3/16 inch casing before drilling in. This job was delayed by engine trouble. The casing has now been run and the well was drilled to 2277 feet, or 10 feet in the sand, during the past week. Several deep dry holes have

Drilling Operations in Oklahoma, Kansas and North Texas

	Mar. 6 Week Ending					Feb. 27				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	...	3	13	...	16	1	2	15	...	18
Other Osage	3	7	51	5	66	3	13	47	11	74
Bristow-Cushing	33	41	176	35	285	32	36	181	30	279
North Oklahoma	10	24	149	77	260	6	28	147	78	259
South Oklahoma	14	25	161	30	230	17	32	134	41	225
Muskogee	1	9	48	10	68	...	6	47	9	62
Okmulgee-Bristow	5	53	120	28	206	5	55	107	28	195
Tonkawa	1	...	6	1	8	1	...	6	1	8
Wewoka-Cromwell	10	13	113	27	163	10	35	104	25	164
Total Oklahoma	77	175	837	213	1302	75	197	788	223	1283
KANSAS	67	82	274	125	548	71	103	160	128	562
NORTH TEXAS										
Eastland County	...	1	43	6	50	...	2	37	4	44
Stephens County	...	24	33	12	69	...	20	36	10	66
Texas Panhandle	...	47	65	18	130	...	37	65	18	120
Mexia District	...	1	1	4	6	...	1	1	4	6
E. Texas Wildcats	...	7	7	13	27	...	7	7	13	27
W. Texas Wildcats	...	39	229	82	350	...	30	202	96	328
Wichita Falls	...	91	182	36	209	...	78	201	43	322
Total N. Texas	...	210	560	171	941	...	176	549	188	913
GRAND TOTAL	144	467	1671	509	2791	146	476	1597	539	2758

OCECO PRODUCTS
on the Stills



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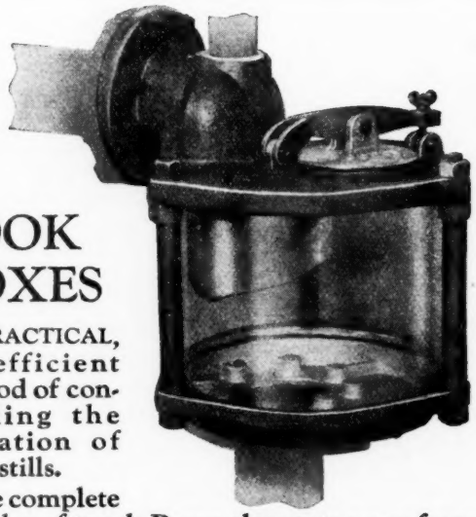

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OIL TANK OCECO EQUIPMENT

SAVES EVAPORATION AND PREVENTS FIRE

Completions in North and Central Texas, Week Ended Mar. 6

Company	Well Farm	Location Survey	Depth	Initial Prod.
Archer County				
Gulf	1-Jackson	Aldridge	1553–1557	95
Gulf	3-Wilson	SP	1593–1595	5
Gulf	1-Hutchinson	ATNC	1390–1398	50
Pandem	7	ATNC	1377–1393	65
Hammond	1-Oldham	Hubble	1353–1371	200
Primrose et al	6-Wolfe	SP	1328–1338	80
Bowers et al	1-Darlick	TEL	1409–1434	75
Roxana	2-Kreeger	TEL	1424–1430	67
Wampum	3-Kreeger	TEL	1411–1417	50
Abernathy	3-Wilson	ATNC	T.D.1662	Dry
Underwood	4-Wilson	ATNC	T.D.1653	Dry
Lewis-Empire	1-McCrory	Walker	T.D.1470	Dry
Gray et al	1-Edwards	Madden	T.D.1710	Dry
Carter-Roxana	1-Wilson	ATNC 114	T.D.1525	Dry
Texas	2-Andrews	Carson	T.D.1541	Dry
Major	1-Wallace	Brigham	T.D.1572	Dry
Abercrombie-Looney	1-Coody	Harris	T.D.1402	Dry
Richardson	1-Gin Lot	TEL	T.D.1501	Dry
Ray-Massie	1-Kreeger	TEL	T.D.1480	Dry
White et al	1-Trinity	TEL	T.D.1501	Dry
Craig-Wilson	1-Langley	Hinds	T.D.1215	Dry
Maer-Stanforth	1-Morrison	TEL	T.D.1500	Dry
Goldsmith-Wolfe	1-Hamilton	TEL	T.D.1128	Dry
Brown County				
Cosden	5-Westerman	Miller	1278–1301	800
Gillette-Dozier	6-Prater	Travis	1307–1325	20
Mulloy-Chandler	5-Stone	Miller	1295–1305	12
Mulloy-Chandler	5-Stone	Miller	1275–1288	130
Mount	1-Gaines	Travis	1334–1336	5
Conway	4-Chambers	Logan	1290–1323	225
Simms	5-Gaines	Miller	1252–1263	30
Simms	6-Gaines	Miller	1260–1275	5
Gilman et al	7-Chambers	Smith	1209–1233	170
Gilman et al	8-Chambers	Smith	1203–1221	40
McLester	2-Wooldridge	ET	1212–1233	100
Coleman County				
Sunflower	4-Gates	Crook	T.D.1080	Dry
Eastland County				
Reeves-Meredith	1-Leveredge	H&TC	T.D.3250	Dry
Magnolia	9-Hankins	Smelzer	2534–2540	3M
Root et al	1-Luse	H&TC	3160–3300	15
Hutchinson County—Panhandle				
Herring-McElroy	1-Smith	M&C	2827–2830	600
Midland County				
Grees et al	1-Jones	TP	T.D. 755	Dry
Mitchell County				
Green et al	1-Elwood	SP	T.D.3953	Dry
Cal. Co	1-Adams	TP	T.D.3070	122
Montague County				
Texas	2-Rowland	Chambliss	1360–1378	35
Humphreys	2-Hynd	Wall	954– 962	80
Reagan County				
Milham	1-Univ.	University	T.D.3355	Dry
Scurry County				
Cal. Co	1-Wood	Smith	T.D.3727	Dry
Shackelford County				
Wells et al	1-McLemore	TEL	T.D.1005	Dry
Helf	1-Black	TEL	T.D. 630	Dry
Roberts et al	2-Mathers	TEL	T.D. 390	Dry
Milham	1-Taylor	TEL	T.D. 925	Dry
Stephens County				
Eisden et al	1-Houston	TP	1830–1832	5M
Magnolia	2-Aiken	TP	T.D.3099	6M
Mid-Kansas	8-Hill	TEL	3175–3185	32
Mid-Kans	1-Morrison	TEL	2918–2925	2M
Wichita County				
Clopton-Willis	1-Willis	Anderson	T.D.1800	Dry
Staley et al	1-Hines	H&GN	T.D.2036	Dry
Allen	1-Ancel	Gibbs	T.D.1610	Dry
Morton et al	3-Waggoner	H&TC	T.D.1887	Dry
Wilbarger County				
Vernon	1-Castleberry	H&TC	1372–1377	5
Landreth	1-Waggoner	H&TC	2323–2353	125
Landreth	1-Waggoner	H&TC	2336–2355	225
Humble	2-Waggoner	H&TC	1858–1880	200
Landreth	1-Waggoner	H&TC	1853–1866	35
Humble	3-Waggoner	H&TC	1850–1860	57
Landreth	2-Waggoner	H&TC	1872–1891	160
Landreth	4-Waggoner	H&TC	1888–1906	360
Young County				
Rowe	9-Hamilton	Holeman	T.D.1227	Dry
Camp	1-Benson	TEL	T.D. 973	Dry
White et al	1-Graham	TEL	T.D.1202	Dry
Swastika	1-Wilson	TEL	T.D.1031	Dry
Underwood	1-Benson	TEL	860– 873	15
Roy Carter	1-Benson	TEL	923– 933	35
Gulf	4-Campbell	TEL	907– 920	20

Completions in North Louisiana and Arkansas, Week Ended Mar. 4

LOUISIANA

Company	Well	Location	Depth	Yield
Urania—LaSalle Parish				
Atlantic Oil Prod. Co.	Tullos No. 8	23–10–1E	1545	Dry
Dixie Oil Co. (Standard of Ind.)	Urania No. 3	24–10–1E	1580	25
Explorers Oil Corp.	Gaharan No. 2	26–10–1E	1556	20
Galloway et al	Pendarius No. 1	24–10–1E	1563	60
Hamilton et al	Bennett No. 2	25–10–1E	1541	200
Hunt-McCurry et al	Urania No. 1	7–10–2E	1519	400
Louisiana Oil Ref. Corp.	Bass No. 3	24–10–1E	1540	80
Louisiana Oil Ref. Corp.	Tremont B-13	25–10–1E	1531	junked
Louisiana Oil Ref. Corp.	Tremont B-16	25–10–1E	1540	300
Louisiana Oil Ref. Corp.	Tremont B-25	25–10–1E	1525	200
Nat. Gas & Fuel Oil Corp.	S. Tullos No. 5	25–10–1E	1539	50
Nat. Gas & Fuel Oil Corp.	S. Tullos No. 6	25–10–1E	1523	100
Standard Drilling Co.	Roark No. 1	26–10–1E	1575	s.w.
O. F. Whittaker	King No. 1	36–10–1E	1539	60
DeSoto Parish—Naborton				
Gulf Refining Co	Willis Williams C-18	31–13–11	6090	s.w.
Caddo Parish—Caddo District				
D. C. Richardson	Youree-Randolph No. 3.	13–20–13	805	1m. gas
Cotton Valley—Webster Parish				
Alabama Petroleum Co.	Robins A-3	21–21–10	2585	150
Union Parish				
Nat. Gas & Pet. Co.	Jenny No. 1	1–20–3E	2175	20m. gas

ARKANSAS

Company	Well	Location	Depth	Yield
Smackover—Lisbon				
Rovenger Oil Corp.	Dumas No. 4	9–17–16	2098	80
Marine Oil Co.	Slaughter No. 1	9–17–16	2104	800
Rovenger Oil Corp.	Goodwin No. 1	16–17–16	2109	125
Smackover				
Gulf Refining Co.	Ralph Bennett No. 9	33–15–15	2375	200
Meek, trustee	LaGrone No. 2	36–15–17	2310	25
Humble O. & R. Co.	F.A.& B.T.Laney No.8	32–15–15	2415	300
Marine Oil Co.	Snyder No. 12	34–15–15	2365	150
Ohio Oil Co.	Cramer No. 18	27–15–16	2290	25
Phillips Pet. Co.	Farris No. 9	34–15–15	2553	50
Texas Oil Co.	Berry No. 10	33–15–15	2371	s.w.
Arkansas Fuel Oil Co.	Ferguson No. 8	6–16–15	2545	35
Lyell et al	Fee No. 1	3–16–15	2365	100
Mazda Oil Co.	Lawton H-4	10–16–15	2602	20m. gas
Pure Oil Co.	Merriwether No. 8	6–16–15	2643	35m. gas
Texas Oil Co.	Graves No. 11	3–16–15	2555	10
Umsted et al	Umstead No. 3	4–16–15	2540	20m. gas

been drilled between this test and the Garber field, precluding the possibility of its being an extension of that field, but it may mean the opening of a new field of undetermined importance.

In a deep test being drilled in the old Billings field, Noble county, by the Sinclair Oil & Gas Co., and the Midco Petroleum Co., a showing of oil is reported to have been found at 4145 feet. This well is located in the sec Nw Sw of 15-23-2 W. and is known as No. 1 Washburn. It is now running the six inch casing to top of sand before drilling in. The well had the green shale from 4112 to 4120 feet, going into sand at this depth, with first oil showing at 4145 feet. Completion of a Wilcox Sand well in this field probably would develop another deep drilling campaign similar to that indulged in at Tonkawa and Garber.

Another wildcat showing in Noble county is that of the Red Bank Oil Co. in its No. 1 Treman, located in the sec sw nw of 16-21-2W., near the town of Lucien and about seven miles west of Perry, Noble county seat. This well is estimated as making 10 million cubic feet of gas in what is probably the Oswego Lime topped at 4490 feet. The flow of gas was unexpected and blew the tools part way up in the hole and dropped them back, after which the hole bridged 70-feet off bottom. The tools will have to be fished out and the hole cleaned before drilling in.

In the north end of the Garber field, in the vicinity of the Prairie Oil & Gas Co.'s Wishard lease, which extended both Layton and deep sand production a considerable distance to the north, D. W. Franchot has an interesting showing in his No. 16 Lynds, in the swc of 7-22-3 W. This well set the 6⅝ inch casing at 4325 feet, topped the lime at 4348 feet, and had the first oil pay at 4382 feet. At last reports it was drilling at 4386 feet and had made 126 barrels the first 12 hours, flowing by heads. The oil tests 46 degrees gravity. Prairie Oil & Gas Co. is drilling an offset to this well in its No. 11 Wishard.

Several good wells have been completed in the Braman field recently, all by the Comar Oil Co., which some time ago demonstrated that it owned all the profitable acreage in the vicinity. One of this company's latest wells is its No. 1 Lawrence.

Completions in Oklahoma and Kansas, Week Ended March 6

OKLAHOMA

Caddo County

Company	Well No.	Location	Depth	Initial Production
Magnolia	7	SWc NE SE 3-5-9W	2375–2405	35

Carter County

Company	Well No.	Location	Depth	Initial Production
Twin State	2	NEc NW 22-2-3W	2650–3034	570
Amerada	23	C SE SW NE 20-5-1E	1606–1630	40
Amarada	22	C W½ SE NE 20-5-1E	T.D.1770	Dry

Comanche County

Company	Well No.	Location	Depth	Initial Production
Magnolia	4	SWc NW SE NE 30-2-9W	2018–2026	25
Bridwell-Heydrick	1	SEc NE SW NE 30-2-9W	2266–2278	18
Westheimer-Daube	2	C SE NW SE 30-2-9W	T.D.2300	Dry

Creek County

Company	Well No.	Location	Depth	Initial Production
Interocean et al	1	SWc SE NE 27-17-8	3142–3146	960
Waite Phillips	2	SEc NE SE 27-17-8	3160–3170	800
Kennedy et al	3	NWc NE NW 6-18-12	2032–2056 OWD	10
Riverland	1	NWc NE SW 28-18-11	2400–2409	4½M
Wright	10	CSL NE SW 24-17-10	1803–1853	70
Henry	1	SEc SW 5-16-12	2039–2045	80
Nowata	1	CNL SW NW 35-17-8	T.D.3743	Dry
Red Bank	1	C NW SE 13-18-10	T.D.2825	Dry
Burke-Hoffield	7	CWL SW NW 33-16-9	2640	Dry
Kelly	1	C SW NE SW 3-14-10	T.D.3264	Dry

Garfield County—Garber

Company	Well No.	Location	Depth	Initial Production
Sinclair	31	C SW NE NE 24-22-4W	T.D.4568	Dry
Carlew	1	C NW SW NW 5-22-3	T.D.2500	Dry
Sinclair	24	C SW SE NW 18-22-3W	T.D.4450	Dry
Sinclair	25	C NW SE NW 18-22-3	T.D.3365	Dry

Garvin County

Company	Well No.	Location	Depth	Initial Production
Magnolia	3	NEc NW SW SW 11-2-3W	1541–1547	40
Magnolia	7	SWc NW SW SE 16-2-3W	1580–1584	30

Grady County

Company	Well No.	Location	Depth	Initial Production
Skelly	2	SWc NW NW 23-5-8W	1356–1360	2M
Briscoe-Hall	1	NWc NE NE 34-5-8	2150–2350	46M
Magnolia	2	CWL E½ NW SW 11-4-8	2253–2259	8½M
Carter	2	C SE SW SW 35-3-5W	1465–1466	½M
Carter	2	NEc NW SE SW 35-3-5	1489–1504	240

Hughes County—Papoose

Company	Well No.	Location	Depth	Initial Production
Transcontinental et al	3	C NW NE SW 26-9-9	3312–3387	157, 12M
Empire	2	C SE NE SW 23-9-9	T.D.3073	Dry
Empire	2	C NE SW NW 26-9-9	T.D.3502	Dry

Hughes County

Company	Well No.	Location	Depth	Initial Production
Indep-Amarada	1	C SE NE SW 18-8-10	T.D.3530	Dry

Jefferson County—Seay

Company	Well No.	Location	Depth	Initial Production
Brown	1	SEc SE NW 33-6-5W	1457–1466	390
Brown	2	C E½ NE NW 33-6-5W	1179–1204	200
Carter	2	SWc NW NE 33-6-5	1320–1482	300
Gypsy	10	NWc SE NE 33-6-5	1329–1350	100
Gypsy	11	SWc SE SE 33-6-5	1338–1355	100
Gypsy	12	NWc SW NE 33-6-5	1245–1255	450
Gypsy	13	NEc SE NW 33-6-5	1325–1337	340
Gypsy	14	CNL SE NE 33-6-5	1338–1356	50
Prairie	5	CNL NW SW 34-6-5	T.D.2010	Dry
Ely et al	1	C SE SW 4-6-5W	T.D. 510	Dry

Kay County—N. Braman

Company	Well No.	Location	Depth	Initial Production
Comar	2	SEc NE SW 21-29-1W	2075–2105 OWD	101
Comar	1	C NW SW SE 21-29-1	1941–1949 OWD	100
Comar	3	NEc SW SE 21-29-1	1954–1967	80
Harris-Hahn	1	SWc NW 22-29-1	1638–1645	10M
Comar	1	NWc NE 28-29-1	1985–2001	81,102 w.

Kay County—Thomas

Company	Well No.	Location	Depth	Initial Production
Twin State	1	C NW NW NW 22-25-2W	4054–4072 OWD	75

Kay County

Company	Well No.	Location	Depth	Initial Production
Harris-Hahn	1	SWc SE NW 12-26-1	T.D.4212	Dry
King	1	SWc SE 22-29-4E	T.D.3725	Dry
Terminal	1	NEc NW NW 36-28-4	T.D.3885	Dry

Lincoln County—Davenport

Company	Well No.	Location	Depth	Initial Production
Carter	5	NEc 2-14-5E	3365–3410	110
Magnolia	12	SEc SW NW 2-14-5	3299–3390	212
Phillips	2	NWc SE NE 10-14-5	3363–3402	260
Phillips	3	SEc NE 10-14-5	3380–3396	200
Gypsy	8	SWc NW 11-14-5	3372–3382	80
Prairie	17	SEc NW NW 3-13-5	3401–3446	200

Lincoln County

Company	Well No.	Location	Depth	Initial Production
I. T. I. O	1	SWc 20-15-5	T.D.4557	Dry
Flynn et al	1	NEc NW SW 25-15-5	T.D.4323	Dry
P & R	1	NWc SW 14-13-6	T.D.4379	Dry
Wilcox	1	NWc SE 5-12-3	T.D.4851	Dry
Wilcox	1	SWc NW SW 8-12-5	T.D.4241 OWD	Dry

Muskogee County

Company	Well No.	Location	Depth	Initial Production
New England	4	NWc SW 14-15-15	745– 807	2M

Noble County—Tonkawa

Company	Well No.	Location	Depth	Initial Production
Mid-Co	13	CWL SE NE SE 30-24-1	T.D. 970	Dry

Noble County

Company	Well No.	Location	Depth	Initial Production
K-D	1	NWc SE 1-22-2	T.D.5242 OWD	Dry

Okfuskee County

Company	Well No.	Location	Depth	Initial Production
Transcontinental	1	CSL SE NE NE 10-10-11	2472–2482	2½M
Indep-Anglo-Tex	7	SWc NE 13-12-11	T.D.2705 OWD	Dry

Okmulgee County

Company	Well No.	Location	Depth	Initial Production
Kingwood	1	NEc SE 21-14-12	T.D.2027	Dry
Kingwood	1	SEc NE 21-14-12	T.D.2770	Dry
Vierson-Walters	3	NWc SW 3-12-12	T.D.3208	Dry
Gardner	1	SWc NE SE 9-14-13	T.D.2665	Dry
Cumberland	3	SEc NE NW 21-13-14	T.D.1673	Dry
Kingwood	3	CWL SW NE 6-12-14	T.D.2776 OWD	Dry
Mickelson	9	SWc NW SW 20-15-12	T.D.1070	2M
Kingwood	1-A	NEc SW NE 35-14-12	3033–3076	¾M
Devonian	11	SWc NW SE SE 7-15-13	2674–2688	250
Hennessey et al	3	CSL NE SW 8-15-14	1830–1860	55
Nicholson	2	SWc SE NE 14-11-13	1336–1347	1½M

Osage County—Burbank

Company	Well No.	Location	Depth	Initial Production
Phillips	5	SWc NW SW SE 2-27-5E	2958–3029	175
Phillips	11	C SW NE SE 2-27-5	2911–2968	500

Osage County

Company	Well No.	Location	Depth	Initial Production
Owen Osage	359	NEc SW SW 8-27-11	T.D.1962	½M
Seamans et al	1	NEc SW 17-26-6	2932–2970	20
Pet. Drlg	16	NEc SW NE SW 26-26-8	1166–1189	1¼M
Interstate	48	NWc NE SW SE 16-26-12	1287–1323	15
Tidal Osage	14	NWc NE NE NW 25-24-8	2130–2171	13
Continental	3	C NE SE SE 29-24-8	2595–2602	1342
Winona	18	CWL E½ W½ SE 28-24-10E	1376–1397	10
Barnsdall	5	SEc NW SW NW 11-24-11	1640–1692	25
Elon	11	NEc NW SE NE 23-22-10	1732–1770	25
Kewanee	4	SWc NE 4-22-11	1640–1668	60
Barnsdall	9	SW NE SW 18-21-9	2200–2275	25
Okla. Natl	708	SWc NW NE 11-21-10	1547–1552	3¼M
Devonian	1	CSL N½ S½ SW 27-21-10	1866–1900	20
Kewanee	8	SW SE SW 19-21-12	1641–1665	100
Barnsdall	13	SW SE SW SW 4-20-12	1980–1990	50
Westland	2	NEc SE 29-20-12	1967–2042	30
Winona	6	NEc SW NE SE 20-29-9E	1550–1575	25
I. T. I. O	2	CNL SE NE SE 15-29-10E	1118–1131	5
Oliphant et al	4	SWc SE NE 15-29-10	1006–1039	100
Oliphant	5	NEc SE NE 15-29-10	1053–1081	90
Duffield-Howard	2	SEc SW NE SW 28-28-11	980–1018	15
Titus-Norris	3	SWc NE 7-21-11	T.D.2095	Dry
Continental	3	NWc SW 28-20-12	T.D.2040	Dry

Pawnee County

Company	Well No.	Location	Depth	Initial Production
Selby-Gypsy	17	CWL NW NW 1-20-7	2873–2877 OWD	20
Murray et al	5	CEL NE NE 2-20-7	2736–2745	40
Magnolia	3	NEc SE SW 9-20-6	3080–3110	25
Minnehoma	3	CEL NE NW 7-20-8	2363–2383	60
Sinclair	5	SWc NE 10-20-8	2572–2591 OWD	324
Magnolia	1	SWc 29-23-5	T.D.4635	Dry
Sun Ray	3	CEL NE NW 5-20-8	T.D.2998	Dry

Payne County—Mehan

Company	Well No.	Location	Depth	Initial Production
Deep Rock	1	C SW SE 23-18-3	3695–3705	7½M
Deep Rock	1	NEc SE NE 27-18-3	4325–4328	258

Pontotoc County

Company	Well No.	Location	Depth	Initial Production
Lloyd-Smith	1	SEc NE NW 6-3-7E	1118–1132	7M

Seminole County

Company	Well No.	Location	Depth	Initial Production
Morgan-Flynn	1	C NW NW SE 10-9-5E	3560–3567	200
Magnolia	2	C SW SW NW 14-8-7E	3178–3185	887

Stephens County

Company	Well No.	Location	Depth	Initial Production
Carter	4	NWc SE NW 2-2-5W	630– 640 OWD	3M
Dierks-Beard	4	CNL NW SE 24-1-9W	2048–2056 OWD	½M
Winkler-McQueen	3	CEL SW NW 28-1-8W	1698–1705	25
Carter	6	CNL SE NE 32-1-8W	2254–2257 OWD	15
McMan	8	NWc SW NW 33-1-8W	2206–2259	35
Pace et al	1	SEc NW 2-2-8W	2211–2214	150
Commercial	9-A	NWc NE SE SW 12-2-8W	1492–1532	25
Knox	2	C SW NE SE 11-2-5W	T.D.2350	Dry
Magnolia	1	SEc NE NW 26-1-9W	T.D.3250	Dry
Magnolia	3	NEc SE 25-1-9W	T.D.2380 OWD	Dry
Knox et al	1-A	SWc SE 7-1-8	T.D.2806	Dry
Lone Star	4	SEc SW SW 19-1-8	T.D.2212 OWD	Dry
Magnolia	6	NWc 33-1-8	T.D.2300 OWD	Dry
Malernee	1	NEc 34-1-8	T.D.2233 OWD	Dry
Ballard et al	1	NEc SE NW 4-1-7W	T.D.3520 OWD	Dry
Empire	7	NWc NE NW NE 5-2-8W	T.D.2229 OWD	Dry
Gant et al	2	C NE NE NW 8-2-6W	T.D.3500	Dry

Tulsa County

Company	Well No.	Location	Depth	Initial Production
S. S. Home	1	CSL N½ SW 24-19-11	T.D.2393	Dry

KANSAS

Butler County

Company	Well No.	Location	Depth	Initial Production
Rogers	11	SWc NE NW 29-26-8E	2660–2750	25
Empire	14	SEc NE NE 35-27-4E	2537–2592	87
Amerada	3	SWc NW SE 22-27-7	2706–2738	100
Sinclair	2	SWc NE SE 22-27-7	2680–2707	139
Texas	2	NEc SE SW 22-27-7	T.D.2745	Dry

Chautauqua County

Company	Well No.	Location	Depth	Initial Production
Watchorn	1	SEc NE 20-32-10	T.D.2350	Dry

Cowley County

Company	Well No.	Location	Depth	Initial Production
Gypsy	1	CNL SE NE SW 28-33-3	T.D.3365	Dry
White Eagle et al	1	NEc 11-33-4	T.D.3515	Dry
Hull	14	SEc NE SE 24-32-4	3013–3064	150

Elk County

Company	Well No.	Location	Depth	Initial Production
Neeley	1	SWc 21-31-10	1397–1400	3½M

Ellis County

Company	Well No.	Location	Depth	Initial Production
Faler et al	1	NWc SE 33-15-20	T.D.3600	Dry

Greenwood County

Company	Well No.	Location	Depth	Initial Production
Swartz et al	1	NWc NE 6-22-12	T.D.2033	Dry
Phillips	1	NWc NE 3-22-10	T.D.2206	Dry
Skelly	1	SWc SE 20-22-10	2296	Dry
Skelly	1	NWc NE 29-22-10	T.D.2873	Dry
Mission	6	SEc SW NW 25-23-8	T.D.2555	Dry
McGinnis et al	2	NWc NE 30-24-11	T.D.2025 OWD	Dry
Comment	1	NWc SE SW 26-26-9	T.D.2563	Dry
Theta	7	SEc NE SE 8-22-10	2315–2349	50
Davis et al	10	NWc SW NE 12-22-10	2041–2135	1225
Manhattan	3	NWc NE 12-22-10	2020–2090	450
Sinclair	35	SEc NW NW 20-22-10	2364–2387	60
Empire	7	SWc SE NW 14-22-10	1859–1908	150
Empire	2	SWc NE 19-23-9	2540–2595	75
Rhodes-Abel	3	CSL NE 16-24-13	1670–1700	45

Harvey County

Company	Well No.	Location	Depth	Initial Production
Wentworth	1	SWc NW NE 4-23-2	2450	Dry

Lyon County

Company	Well No.	Location	Depth	Initial Production
Phillips	3	SEc SW NW 33-21-12	1900–1932	10
White Eagle	2	NWc SW SE 34-21-10	2177–2184	200

Russell County

Company	Well No.	Location	Depth	Initial Production
Derby et al	2	NEc SW SW 32-11-15	2869–2873	240
Derby	5	NEc SW 5-12-15	2767–2772	76
Johnson	6	NEc SE NW 5-12-15	2781–2784	120
Mid-West	21	NEc SW NW 8-12-15	2930–2935	160
Valerius	8	SEc NE SW 8-12-15	2930–2935	100
Valerius	12	NWc SW NE 8-12-15	2961–2967	96

Woodson County

Company	Well No.	Location	Depth	Initial Production
Alters et al	1	SWc 13-25-14E	T.D.1585	Dry

If every refiner knew what every Dubbs licensee knows, every refiner would be a Dubbs licensee

Universal Oil Products Company
Owners of the Dubbs Process
310 Scuth Michigan Ave
Chicago, Illinois

Standard of New Jersey Puts Marketing Under Committee

CLEVELAND, March 5

TRANSFERS and promotions in the domestic marketing division of the Standard Oil Co. of New Jersey, 26 Broadway, made necessary because of the retirement on Jan. 1 of George W. Mayer from the board of directors on which he represented the domestic marketing interests, and a general reorganization of the sales departments, have just been announced by that company, through the Lamp, company magazine.

Instead of having one individual at the head of the domestic trade sales department as previously, a new domestic sales committee with four joint managers, has been created. The committee is composed of: E. G. Barber, formerly assistant to Mr. Mayer and head of the domestic marketing division; E. A. Holbein, formerly general manager of the Baltimore marketing division which has now been abolished; J. A. Van Wynen, formerly general manager of the Newark, N. J., division; and A. Clarke Bedford, former assistant to J. A. Moffett, Jr.

The old domestic trade committee will maintain its organization with J. H. Senior continuing as chairman, but it will no longer meet three times a week as formerly since all of the routine matters under its jurisdiction will be handled by the four salesmanagers of the new committee. This arrangement is somewhat similar to the division of work which existed up to the dissolution, but it is believed that under the new line-up, the managers can maintain a much closer contact with the men in the field. Two out of the four will travel about the territory most of the time. Mr. Van Wynen started out on his first trip through the Baltimore field early in February, where he visited every main office of the company, while Mr. Holbein left at the same time for New Orleans to visit offices in the Standard of Louisiana territory.

Although no new director has been elected to succeed Mr. Mayer, Mr. Moffett has taken over his general duties indefinitely, while the foreign marketing responsibilities, formerly handled by F. D. Asche, vice president, have also fallen on Mr. Moffett.

John T. Massey, who has been with the Standard Oil Co. of Louisiana, New Orleans, for 22 years and for the past eight years manager of the Tennessee and Arkansas division, has been transferred to the New York headquarters of the Standard of New Jersey as assistant to Mr. Moffett. Mr. Massey will also fill a new position as general assistant in the marketing activities which position may take him into various fields as special problems arise.

Mr. Massey has been succeeded at Memphis, where his headquarters were as manager, by C. L. Williss, and in the latter's place as assistant manager is John R. Riddell. H. W. Chapin, formerly assistant manager at the Baltimore offices, is now assistant to the general managers with instructions to specialize on service stations. He will continue to make his home in Baltimore. John E. Skehan, who formerly was in charge of the Newark City district, and who has a record of 24 years in the marketing department, succeeded Mr. Van Wynen as manager of the Newark branch.

Long experience, which in each case began at the bottom, marks the rise of each one of the men included in the promotions. Mr. Massey started at the age of 20 with the Illinois Central Railroad offices where he gathered much information about the building and operation of railroads. In 1904 he turned up at Memphis, Tenn., and obtained a position as stenographer to C. O. Scholder, who was then special agent at Memphis for the Standard of Louisiana, and now vice president. The following year Mr. Massey was made chief clerk in the accounting department, and in 1917 became assistant special agent. A year later he was promoted to the position of special agent in charge of marketing in Tennessee and Arkansas. In 1925 he was temporarily detached from that post to spend nine months in Europe as a member of the efficiency committee making a survey of company conditions.

Mr. Williss, Mr. Massey's successor, also started out with a knowledge of shorthand and typewriting, and again like Mr. Massey, was associated with the Illinois Central Railroad. He was for three years private secretary to a patent attorney of the National Cash Register Co. and then became traveling secretary to the assistant general freight agent of the Illinois Central at Memphis. In 1907 he succeeded Mr. Massey as Mr. Scholder's secretary, and again succeeded the former as assistant manager 11 years afterward of the Memphis office, and now in full charge.

The Editor's Viewpoint

Catch Words Based On Part of Facts

ONE thing the average human likes to do is to take a striking idea and talk about it without bothering to run down the facts and think the proposition out; result, this world is cursed with half-baked ideas from which the oil has been a keen sufferer.

Take fuel oil for instance. Stop burning oil and you stop a "big economic waste" has been the cry, whatever that last phrase may actually mean.

The facts, so far as they are available now, seem to show that not more than 25 per cent of the fuel oil consumed in this country comes into what may be called unnecessary competition with coal and that this will stop as the demand for gasoline increases, providing no new oil fields of vast extent are found.

President Teagle of the Standard of New Jersey, gave some estimates on the uses of fuel oil to the Federal Oil Conservation Board at Washington the other week. He said that of the 400,000,000 barrels of fuel oil consumed in this country last year 39 per cent was in the higher uses, by the navy and our marine use, in diesel engines, for the manufacture of coal gas, all uses which no one has condemned but in fact praised; that imported fuel oils amounted to 15 per cent and any undue restrictions on these would send them to other countries; that 21 per cent is consumed on the Pacific coast where in relation to the high cost of coal it has served a most useful purpose and that the whole Pacific coast has been so built up around fuel oil that there would be a violent battle to take it away from them, a view agreed to by Mark L. Requa, formerly in charge of the government's oil department during the war and an advocate of intelligent conserving of petroleum resources.

That left the 25 per cent of 100,000,000 barrels used seemingly in competition with coal. But here, too, some of that use might well be pointed to as in direct accord with good economy and from which the general public received great benefit.

The figures so impressed Secretary of Commerce Hoover that he asked Mr. Teagle to join with the government in seeing if actual figures could be obtained in some way.

It all gets down to this, the more you study and know the facts of the oil industry the more efficient and economical you find it to be. The oil industry is so big and complex that it is hard to get all the facts from which to draw safe conclusions. Yet the size of this last job is no excuse for basing opinions on part of the facts.—W. C. P.

Maybe It's Psychology

OUT in California—southern California—where the orange grows, the sun shines, and hundreds of thousands of people from the rest of the United States tarry to get away from the rigors of winter—well out in the land of sunshine this year the oil companies have introduced "Winter Gasoline".

And it has made a big hit.

No one has laughed, save possibly some critical easterners, and no chamber of commerce has yet demanded that the signs proclaiming "winter" fuel come down because they may be bad advertising for this land of sunshine, etc., etc. Nor have the scientists explained why a minimum temperature of 50 or 60 deg. F. needs a "winter gasoline."

Still, some other things were rather wrong end too out there in California this winter. Many visiting oil men almost "got their death of colds" in that sunny climate, and required doctors' care. And some of the natives were heard complaining there had been so much dry weather—and it was all sunshine too—that they were praying for a nice, long, rainy spell, not only to help the crops but also to help them—the natives—get rid of their colds.

However it is a fine country, even if "winter gasoline" is now the rage.—W.C.P.

Local Taxes Still Far Too High

THE federal government has gone as far as it can in reducing the tax burden, President Coolidge pointed out as he signed the new tax bill, and further savings in the cost of government must come through states, counties and municipalities eliminating some of their extravagant and wasteful methods of carrying on the public's business.

But the states and local governments, except in rare instances for the latter, have shown no inclination to respond to the general trend of the period towards economy and greater efficiency in operations. During the past four years when the federal administration has pruned department expenses, revised its budget and made a distinct saving to the country in its tax bill, the state and local governments have gone blithely ahead running up their expenses, putting out new bond issues if they could find legal pretense for so doing, increasing the interest bill of the future to create a few more jobs now, or at least avoid the disturbance that would be created in killing off some of the useless positions now in existence.

President Coolidge is authority for the figures that, despite a $2,000,000,000 saving in federal taxes since 1921, the total tax bill the nation paid in 1925 was $11,500,000,000, as against $9,500,000,000 in 1921; in other words the cost of state and local government increased $4,000,000,000 while the federal administration was cutting off $2,000,000,000.

Despite the sentiment of the times, several states are now planning to increase their gasoline tax by 2 or 3 cents a gallon, as the easiest and most painless way to extract increased revenues from the public to carry on state business on a more magnificent scale than ever before.

This will continue until sufficient protest is made, not against the form or amount of any specific tax proposition, but against increasing the cost of government through any kind of tax. When business heads and even individuals look on taxes as one important item in the cost of doing business and maintaining a home and fight as hard to get unduly high taxes down as they would any cost item which was out of line, then state and local governments will begin to respond.—V. B. G.

Fortify for Fire Fighting

Considering the extra hazard involved, the fire record of the Oil Industry of the United States is creditable.

Tank Fire Record

55% of all tank fires are due to lightning.

33% exposure to other fires.

12% matches, smoking, static electricity, arson and unknown causes.

Phomene
(Foam Type)
2½ Gallon
Extinguisher

Most of the oil tanks that burn contain crude oil. Very nearly all crude oil storage is outside of municipal limits. With the exception of a few of the older plants (principally refineries) crude oil is generally stored on tank farms and pipe line terminals which are almost always located well out in the country.

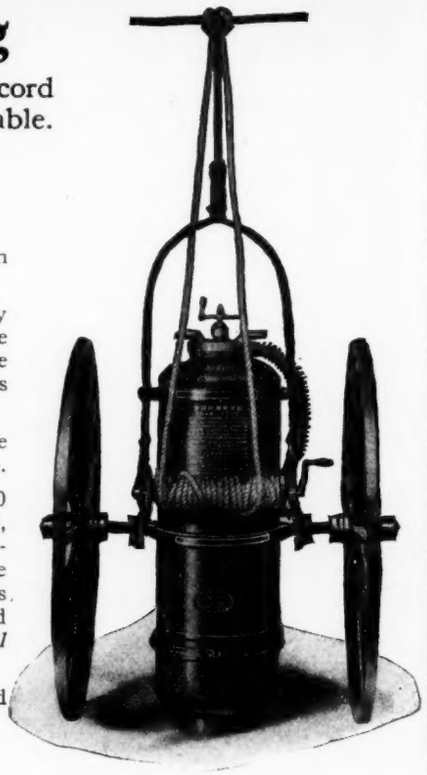
Because they are usually beyond the protection of city fire departments, oil refineries are doubly in need of fire protection.

PHOMENE (Foam Type) 2½ Gallon Extinguishers and 40 Gallon Engines are effective on all classes of fires, especially oil, gasoline, naphtha, enamel, tar, wax, grease, shellac, lacquers, inflammable solvents and chemicals. Our new two unit foam charge in powdered form is convenient. Wherever quantities of materials of an oily or highly inflammable character are manufactured, used or stored, these devices are best to install. *They prevent small fires from becoming big ones.*

Equip your trucks with 1 quart or 1½ quart Improved PYRENE Extinguishers.

Demonstrations arranged—any time—anywhere.

The Pyrene Manufacturing Co.
Newark, N. J.



Type D-3 P Outdoor or Yard
40 Gallon Engine

Sell More Crankcase Drain Jobs

Study These Photos a Minute

DO you realize that by equipping your station with **HUTCHINS OIL TESTERS**, you can place something in your station attendant's hands which will enable him to show and convince the Ford driver when he should drain out the old black, thin wornout oil and refill with fresh oil?

Read what users of this tester have to say about it:

"The first day we used ours we drained 9 cars by this simple demonstration."

"I drained 3 the first morning I received mine."

"We consider it a very useful device wherever Fords are serviced."

"I consider it the best paying piece of equipment, cost considered, that I have around my place."

"It is worth more than you ask for it, just from a labor saving standpoint, as it helps keep drives clean by catching old oil in place of letting it drip on the floor."

M. M. HUTCHINS, 1325 Burns Ave., St. Paul, Minn.

Jobbers: K. C., Filling Sta. Supply Co., 310 E. 17th St., Kansas City Mo. and Mexia Battery & Tire Co., Mexia, Texas

SPECIAL TRIAL COUPON

Send ..... testers (List Price $2.00, Less 50c for this Coupon)

also price on ..... I run ..... stations. Am interested in jobbing proposition.

Name ..... Address .....

Holmes-Manley Process Gives Long Cycle, Little Coke, Good Gasoline

By R. C. Holmes
Vice President, The Texas Co.

Prepared to Be Delivered Before Petroleum Division, A. I. M. E. Meeting, New York, Feb. 15

MOST of the units of the industry that are successful or deserving of success are constantly, both of necessity and as good business policy, directing their efforts to the end of improving processes and practices, whether in producing, transportation, manufacturing or marketing.

Gasoline was in little demand and of little value until the use of the gasoline stove became general. There was no need or demand for more than the natural yields from the crude oil until the advent of the automobile with the internal combustion engine. With this development under way, it became evident that a substitute for gasoline or a more effective method of converting some of the less valuable fractions of petroleum into gasoline, would be needed to fill the increasing demands.

The Texas Co. was early among those actively carrying on research and development work to this end.

Coincident with the development work, the cost of equipment, cost of operation and patent protection have all had due consideration and attention.

Carbon Serious Problem

Because of the serious operating difficulties resulting from the formation of carbon in pressure cracking units, special efforts have been made, first, to prevent excessive accumulation of carbon on the heated surfaces of the equipment, and second, to devise and design equipment which would effect the decomposition with a minimum amount of carbon formation and damage to the equipment by excessive temperatures.

No refinery installations can be so productive of heavy losses or of large profits as cracking installations. Almost any other equipment can be economically used for varying conditions of oil refining, but cracking equipment is inevitably expensive and suitable for the one purpose only. To justify the investment expenditure, it must be productive of satisfactory yields of good quality gasoline and at satisfactory costs. To accomplish the latter, it must be capable of almost continuous operation.

A cracking unit is not an economical gas or coke plant, therefore, it is highly desirable that the design of the equipment and method of operating be such as to produce not only the maximum yield of gasoline but also the remainder of the products, so far as possible, in liquid and merchantable form. Refinery coke of the character that comes from any pressure still operation, as practically every refiner knows, is not a very readily marketable product, nor a product that ordinarily can be economically consumed as fuel in the refinery as compared with fuel oil.

Danger in Storage

If stored in any considerable quantity it is very difficult to prevent spontaneous combustion and the entire destruction of the accumulation. If there are any places where petroluem coke is marketable at greater profit than fuel oil, thereby justifying its production, a better grade can be made at less cost in the regular coke still construction without pressure.

In the Holmes-Manley process of The Texas Co. the desired results, we believe, are accomplished in a most satisfactory degree. In any event, the proof of a process is in the performance.

The Holmes-Manley apparatus most generally in use comprises a pre-heater coil, of the series type, in which the oil is raised to a full cracking temperature; four vertical stills, into which the oil discharges; a bubble tower type of dephlegmator, which receives the vapor from the stills; a reflux condenser, to which the vapors pass from the top of the bubble tower: a water cooled condenser, which receives vapors from the reflux condenser; a surge pump, or jet pump, which returns the clean, heavy condensate from the bottom of the bubble tower and forces it into the stills through a pre-heating coil; expansion drums, into which the bottoms, or residue, from the stills are drawn and distilled largely by contained heat; and a condenser coil for condensing the vapors from the expansion drums.

Heated to 800 F.

The oil traverses the heating coil so rapidly that while it is heated to full cracking temperature — approximately 800 degrees F. (not high enough, however, to damage the coil)—there is no substantial decomposition of the oil in the coil, and hence carbon trouble here is avoided.

Oil is maintained at an approximately even level in the vertical stills, which are set in a furnace with the ends projecting above and below the furnace, and heat is applied to the side walls, within the furnace.

Scrapers are mounted on vertcal shafts in each still and are rotated during the operation, thus preventing the accumulation of carbon on the heated surfaces. Any carbon which is formed tends to gravitate to the cooler bottom space, below the heated zone.

The oil in the stills is equalized by liquid interconnections, just above the furnace at the point where it is desired to maintain the oil level, the vapor being taken off the stills as fast as formed and led directly to the bubble tower.

Comparatively low furnace temperature is maintained around the stills as only a moderate heat is necessarily applied at this point, most of the heat being supplied to the oil in the coil. The oil is maintained in the stills to a slightly lower temperature than at the exit of the coil, cracking being carried on in the stills at relatively low temperature (approximately 775 degrees F.). A comparatively long time element is obtained, as well as a better and more complete conversion effected by the use of four stills instead of one, and with the plurality of stills large capacity secured in small units.

Cracking Effected In Stills

Thus, ideal conditions are maintained in the coil, where the greater heat is applied wtihout substantial cracking, and cracking effected in the stills where a cracking temperature is merely maintained. The operation may be epitomized by saying that, the oil is heated in the coil without cracking and is cracked in the stills without heating, the temperature merely being maintained in the latter.

There is another principle involved in the process which may be determined "clean circulation." It is accomplished by the hot cyclic return of the back trap from the bottom of the bubble tower to the pre-heating coil, none of the undistilled residue being permitted to return to the coil where the high temperature is applied.

The result of the Holmes-Manley closely regulated operation is to produce gasoline of unexcelled quality directly from the pressure stills without rerunning; the residue from the expansion drums being a low gravity, merchantable liquid fuel, and the total carbon produced in the system being extremely small, the formation of coke and carbon and fixed gases being, as far as possible, avoided.

How well this result has been accomplished is well illustrated by the fact that commercial runs have, over long periods of time, exceeded on the average of more than 15,000 barrels each of fresh charge through the process, and some of these units have continued in uninterrupted operation for over 60 days. The longest continuous run was for 63 days in 1923 in one of the older units,

with a total charge of 86,424 barrels of cold, or fresh, stock, the details of which are as follows:

West Tulsa Works—Battery 3—Run 36

From 6:00 A. M. 10-28-23 to 8:00 P. M. 12-30-23

Charging Stock	Bbls.	Per-Cent
Fresh Gas Oil	44,457	51.44
Cycle Gas Oil	41,967	48.56
Total	86,424	100.00
Yield		
Naphtha Distillate	32,387	37.48
Pressure Bottoms	51,491	59.58
Wet Gas—4,753,320 Cu. Ft. (3,159 Ft. per Bbl.)	1,505	01.74
Dry Gas—11,031,276 Cu. Ft. (4,702 Ft. per Bbl.)	2,346	02.71
Coke—25,110 Lbs. (305 Lbs.)	82	00.09
Total	87,811	101.60
Gain	1,387	01.60
Total Charge	86,424	100.00
Under pressure	1,526	Hours
Rate charged per hour	56.63	Barrels
Average Operating pressure	240	Pounds
Total Fuel Consumed	5.45	Barrels (Per 100 Bbls. charged)

Tests of Naphtha Produced

Gravity	60.5
Initial	84
20%	189
50%	279
90%	394
End Point	414

With the completion of the last units during the latter part of 1925, this company has in its own plants a total of 79 units, the first 24 of which, built in 1920, are rated at about 20,000 barrels per month charging capacity; the balance from 30,000 to 36,000 barrels per month each.

During 1925, 20,910,497 barrels of gas oil was charged through these units with a production of 8,235,955 barrels of gasoline, equal to 39.39 per cent of total charge and 66.11 per cent of fresh, or virgin gas oil. The total charge up to Jan. 1, 1926, exclusive of operations prior to 1920, amounted to 67,639,538 barrels.

The new units that we are now installing are of such construction as to permit of a wider pressure range, varying it to meet the exact requirements of each particular charging stock, and a considerably better performance than the average reported above is possible. It is conservatively estimated that these new units, on gas oils or similar distillates from average Mid-Continent crude running, will average a charging capacity of 36,000 barrels per month with yields and tests approximately as follows:

Table 2—Yields Obtained—Tests of Products

Charging Stock	Bbls.	Per Cent
Fresh Gas Oil	22,500	62.50
Cycle Gas Oil*	13,500	37.50
Total	36,000	100.00
Pressure Still Yield		
Condensate	270	00.75
Naphtha Distillate	16,200	45.00
Total	16,470	45.75
Cycle Gas Oil*	13,500	37.50
Cycle Fuel Oil	4,500	12.50
Fixed Gas—8,339 M. Cu. Ft	1,715	04.76
Coke—56,160 Lbs	180	00.50
Total	36,365	101.01
Gain	365	01.01
Total Charge	36,000	100.00
Treating Yield		
Gasoline	16,223	98.50
Loss	247	01.50
Total	16,470	100.00

Finished Yield	Bbls.	Percent Based on Total Chg.	Percent Based on Fresh Gas Oil
Gasoline	16,223	45.06	72.10
Cycle Fuel Oil	4,500	12.50	20.00
Fixed Gas—8,339 M. Cu. Ft.	1,715	04.76	07.62
Coke—56,160 Lbs.	180	00.50	00.80
Total	22,618	62.82	100.52
Gain	118	00.32	00.52
Fresh Gas Oil	22,500	62.50	100.00
Cycle Gas Oil	13,500	37.50	
Total Charge	36,000	100.00	

*Cycle Gas Oil is the product obtained from the redistillation of Pressure Still Bottoms.

Tests—Finished Gasoline

Gravity—Baume	60.5
Color	Water White
Initial Boiling Point	90
20%	180
50%	275
90%	380
End Point	400
Sulphur	Less $\frac{1}{10}$ of 1%
Corrosion	Good
Doctor	Negative
Heat Reaction	56
Iodine Value	87
Acid Absorption	11

Tests—Cycle Fuel Oil

Gravity—Baume	5.0
Flash—Cleve. Open Cup	225
Fire—Cleve. Open Cup	290
Viscosity—Furol — 122 F.	70
Free Carbon	0.4%

Operating in this manner, exclusive of royalty, gasoline can be made at less than two cents per gallon over and above the cost or value of the charging stock, the operating costs in this including not only the plant costs but all general overhead and all other charges properly applicable to the operation, whether a plant by itself or a part of a general refinery installation.

Some of the distinct advantages of the Holmes-Manley Process are as follows:

1st—The large throughput in comparatively small units, the contents of which, including stills, pre-heaters, exchangers, condensers, etc., is only about 450 barrels.

2nd—The large percentage of liquid yield with minimum amount of carbon and minimum amount of fixed gases.

3rd—The satisfactory yield and high quality of naphtha produced, which does not require redistilling and requires only chemical treatment to make it fully meet all requirements of the consuming trade.

4th—The generally lower temperature operation and the very satisfactory temperature regulation possible, which avoids overheating at any point in the equipment, and as a consequence, a sweeter, better grade of gasoline, with better distillation and higher gravity, is produced and, as stated above, the minimum of carbon and of fixed gases.

5th—The percentage of time which equipment can be kept in operation. It is estimated that our latest type units can be very easily kept under pressure an average of about 90 per cent of the time.

6th—As the equipment is now designed and operated, it produces gasoline, cycle gas oil, and what we term cycle fuel oil, and while the yield of this fuel oil is small and the gravity low, the quality is good, the viscosity low and is readily consumed in the refinery or salable for use by other industries as steam fuel.

7th—Color: Water white.

The trade is fast recognizing the distinct advantages of these properly made cracked gasolines over the straight run gasolines, because:

(1) Of the general higher percentage of lighter and more volatile fractions.

(2) Of the better starting qualities, and

(3) Of the non-detonating (anti-knock) qualities.

J. C. McDowell Dies at Pittsburgh

Staff Special

PITTSBURGH, PA., March 6.—Jesse C. McDowell, a veteran of the oil and gas industry, widely known corporation executive and oil and gas engineer, died at his home March 2. He was 74 years old.

Mr. McDowell worked his way to positions of prominence through various stages of oil and gas field endeavor. Born in Summerhill township, Crawford county, Pa., he finished common school studies, studied civil engineering, was a teacher in rural schools and then became associated with his uncle, James McDowell, Jr., in land surveying.

In 1881 he became a civil engineer for the United Pipe Lines and subsequently took charge of construction work for the same company. He constructed a number of large pipe lines among them the oil line from the Lima, O., field to Chicago.

Coming to Pittsburgh in 1892 at the opening of the McDonald field, Mr. McDowell became a special agent for the National Transit Co. and presently was right-of-way manager of that and affiliated companies. He left this position in 1899 to become vice-president and general manager of the Philadelphia Co., at that time controlling nearly all the gas and other public utility companies in Pittsburgh and vicinity.

He formed an assocation with Col. J. M. Guffey in 1901 and helped in the organization of the J. M. Guffey Petroleum Co. and the Gulf Refining Co. As vice-president and general manager of both companies, he supervised the building of the large refinery at Port Arthur, Tex., later acquired by the Mellon interests.

His next organization venture was with T. N. Barnsdall and others. They formed the Union Natural Gas Corp. This company built an extensive system of natural gas lines throughout Ohio and northwestern Pennsylvania. The same group organized the Kansas Natural Gas Co. and the construction engaged in by this company was under the management of Mr. McDowell. About the same time he became interested in Canadian natural gas and organized the Dominion Natural Gas Co. of which he was president for many years. His interests were

by now extended into many parts of the continent and at a later date he helped to form the Empire Gas & Fuel Co., Empire Refining Co., Empire Pipe Line Co., remaining as the operating head of them for a number of years.

Mr. McDowell was for two successive terms president of the Natural Gas Association of America. He was appointed by the government as a member of the national committee on natural gas conservation and during the war was chairman of the sub-committee on distribution.

He was prominently identified with many societies, social and professional, was a member of the board of trustees of the Chautauqua Institution and of the Christ Methodist Episcopal Church.

Mr. McDowell is survived by his widow, Mrs. Caroline H. McDowell; one son, Horace H. McDowell, of Victoria, Tex., and by two sisters. The funeral was held at the residence on Wednesday afternoon and was attended by many friends, among them being a large number of oil and gas industry leaders.

Magnolia Officials Go To Sealy's Funeral

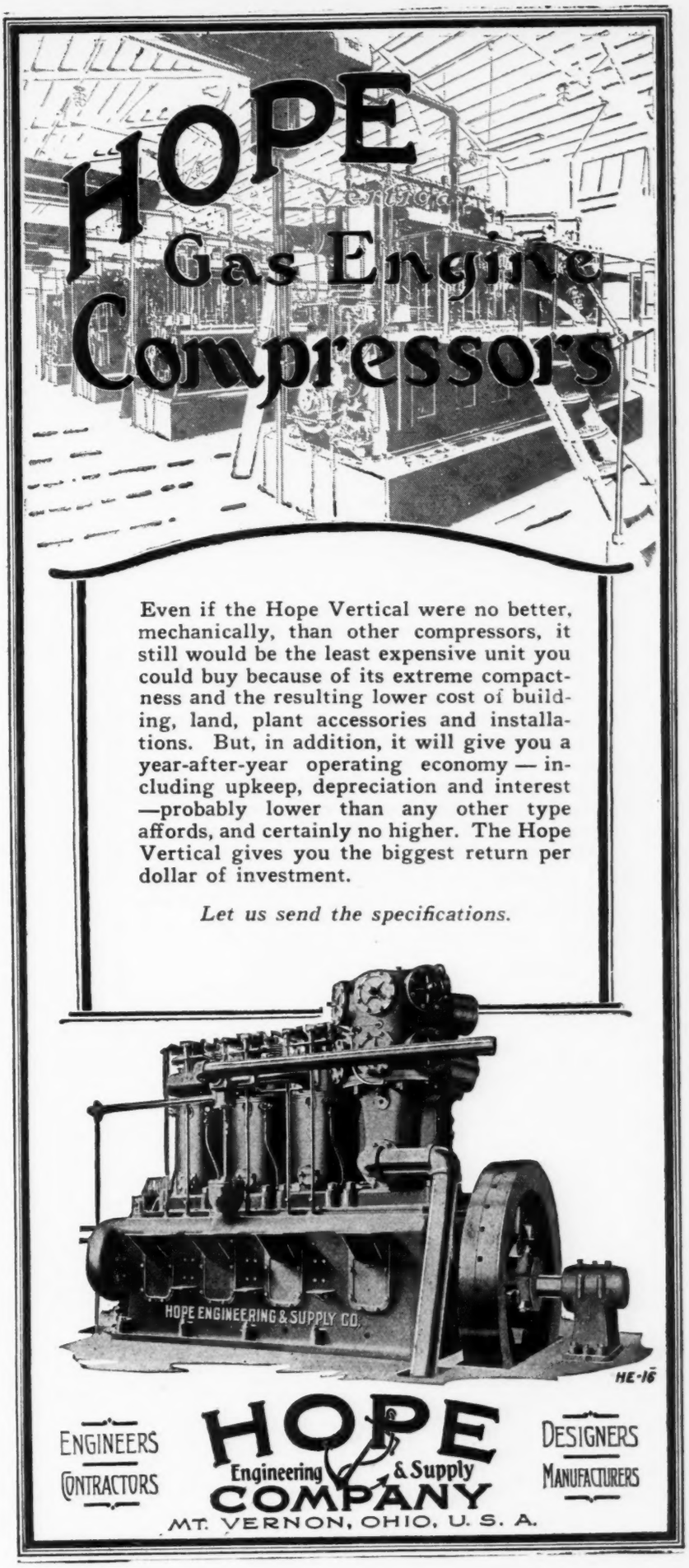
Staff Special

GALVESTON, March 6.—Officials of the Magnolia Petroleum Co. closed headquarters offices at Dallas all day Saturday and came to Galveston for the funeral of John Sealy, chairman of the board of directors, who died in France at the age of 56 years, Feb 19.

A special Pullman car was chartered for the trip from Dallas of President and Mrs. E. R. Brown; W. C. Proctor, vice president and treasurer, and Mrs. Proctor; B. H. Stephens, vice president and general manager; W. H. Francis, vice president and general attorney, and Mrs. Francis; D. C. Stewart, vice president of Magnolia Petroleum Co., and general manager of the Magnolia Pipeline Co.; T. J. Fitch, assistant manager Magnolia Pipeline Co.; A. C. Ebie, vice president and sales manager; F. V. Faulkner, vice president and manager of producing department; E. P. Angus, assistant manager of sales; N. J. McLaughlin, assistant manager of production; F. M. Lege, Jr., president and manager of the Magnolia Gas Co.; W. H. Hastings, superintendent of Corsicanna refinery; John Ricker, manager of Forth Worth refinery; H. E. Spaulding, manager of traffic department.

EVANSVILLE, IND.—H. F. Koch Stations Co. recently completed the installation of a 300,000 gallon storage tank for gasoline.

A new filling station was opened by the company on Feb. 4 on Dixie Bee route No. 16, according to John H. Bertsch, manager.


HOPE
Gas Engine
Compressors
Even if the Hope Vertical were no better, mechanically, than other compressors, it still would be the least expensive unit you could buy because of its extreme compactness and the resulting lower cost of building, land, plant accessories and installations. But, in addition, it will give you a year-after-year operating economy — including upkeep, depreciation and interest —probably lower than any other type affords, and certainly no higher. The Hope Vertical gives you the biggest return per dollar of investment.
Let us send the specifications.
HOPE ENGINEERING & SUPPLY CO.
HE-16
ENGINEERS
CONTRACTORS
HOPE
Engineering & Supply
COMPANY
DESIGNERS
MANUFACTURERS
MT. VERNON, OHIO, U. S. A.

"Super" Stations and Oil Companies Compete for Gasoline Business

By V. B. Guthrie
Managing Editor

Part 1

IT seems to be the custom for the visitor to southern California to pack up, along with his bathing suit, riding clothes and golf clubs, a set of good standard superlative adjectives with which to describe its varied attractions, the genial smile of perpetual sunshine, fascinating monotony of the desert, mountain peaks rising superior to the hubbub of civilization at their feet, derricks spilling pell mell from Signal Hill to rudely elbow pleasant Long Beach bungalows into oblivion.

That same set of adjectives can be used in describing many phases of service station operation along the California coast, the artistic layout, neatness and yet economy in design of the oil company stations; the attractiveness that flowers the year around lend to station properties; the growth in numbers and developments as to services offered by the individually owned and operated stations.

While this last named development is most noticeable at Los Angeles, this entire Pacific Coast territory is now the scene of competition for the gasoline and motor oil retailing business between the oil company stations and those privately owned, known as super service, de luxe or complete unit stations, which have no oil company connection as a source of supply.

The oil companies, with but one exception in Los Angeles, as far as is known, offer at their filling stations only gasoline and oiling and greasing service.

The independent stations offer, in addition to as many as five—as far as noticed—brands of gasoline and even more brands of lubricating oils, any or most all of the following: limited or complete lines of automobile accessories, tires, tire repair service, batteries and battery service, varying degrees of garage repair work, washing and polishing, top dressing. This for the motor. Then the motorist himself can be serviced at many with: soft drinks, tobacco, food at anything from a hot dog stand to a complete restaurant, lodgings for the night, barber shops and hairdressing shoppes for women, flower stands, radios and parts and so on.

Differing in size, appearance, service and lines of merchandise offered, these Independent stations are spread along the country roadside, often bizarre in design and decoration of their buildings, and also in good residence and business sections of the towns, where they are often in good harmony with their surroundings. Roadside merchandising in general often gives a carnival appearance to sections of principal routes near the towns.

There are not only gasoline stations—offering almost anything in addition. There are fruit stands, some exceedingly attractive, stands where basketware is handled, tearooms, flower stands, curio and Indian goods stands and so on. They are all right at the edge of the road, but the roadside stands through the east are not to be compared with them for attractiveness and business like operation. Near Monrovia is a place that is justly famous far and wide for walnut cookies. It also handles preserves, jellies and orange juice, but its trade is mostly cookies.

The best looking and best run of these roadside places seem to be those that stick to one line and do not try to handle various lines of service and merchandise. Real salesmanship is in evidence at some of these places.

At some points in California these independent gasoline dealers are organized and present a solid front to the oil companies, seeking concessions to the retailer through the pump of more than the present recognized 4 cents and trying to keep the oil companies, in some cases, from putting in more of their own service stations. All oil companies sell the dealers from tank wagons, of course.

Data on Stations

The total number of oil company service stations in its territory—California, Washington, Oregon, Arizona and Nevada, and Alaska, and Hawaii—the Standard Oil Co. of California, placed at 2200 as of March, 1925. Of this total the Standard operated 726 and other oil companies 1474. The total number of Independent, or privately owned stations, in the same territory was then 5130, and it is estimated that 500 stations of the latter class have been put in since this estimate was made, making the total number of gasoline stations 7830. Los Angeles last October had 808 privately owned stations, as against 482 oil company stations, a total of 1290.

For the number of automobiles registered in this territory, this total of gasoline stations is greater in proportion than other parts of the country. It gives the visitor with an eye for oil stations that impression too, because this total of 7800 stations is not spread out as uniformly over the territory as in more intensively settled eastern parts of the country. It is clustered around the towns and along the motor routes, which are indeed few compared with the expanse of territory they cover.

There are whole counties together in these coast states where very few humans set foot in the course of the year and driving a car would be impossible.

There are stretches of desert in California and Arizona where towns of any description are 100 miles apart or more and the road dodges around the foothills, through uninterrupted stretches of sand and cactus and greasewood ex-

What Factor is Tourist Trade?

ANALYSIS of gasoline consumption figures in Los Angeles indicate that, even in this mecca of visitors, tourist trade is not as large as many oil companies have considered it in general.

There were 363,960 cars registered in Los Angeles as of Jan. 1, 1926. Per car gallonage in California runs higher than for almost any other state, based on gasoline tax returns, an average of 530 gallons per car per year. This includes tourist consumption as well as home trade.

Taking an average arbitrarily of 450 gallons per car as consumption of cars registered in Los Angeles, local trade there would make a market of 163,800,000 gallons annually.

The Southern California Automobile Club estimates 245,000 tourist cars visited Los Angeles in 1925, staying an average of 72 days. Figuring an arbitrary gallonage of 125 gallons per car for this length of stay, this tourist trade would consume not over 31,000,000 gallons, less than one-fifth of the local trade.

Of course, much of this tourist gasoline would be bought outside Los Angeles, as would considerable gasoline consumed by cars registered in Los Angeles. However, the figures give some index of the relation between the two classes of trade.

Signs Plentiful at the Independent Service Stations

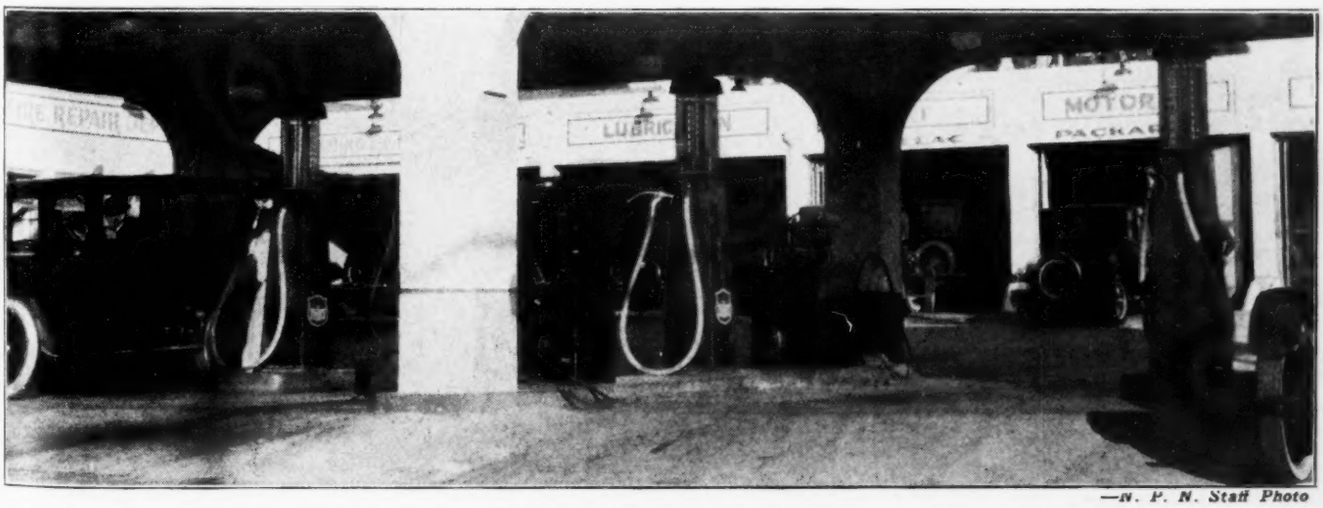
—N. P. N. Staff Photo

Upper photo shows the variety of lubricating oil signs, to say nothing of signs talking of other products at a privately-owned station in Los Angeles. Two lower views give an idea of the variety of small auto accessories with which many of these independent stations are stocked.

cept for the gasoline stations every 15 to 25 miles. These are complete stations in the sense of taking care of the immediate needs of the straggling tourist.

They stand alone on the desert, their approach marked by junked chassis of abandoned cars, whereas years ago skeletons of cows and horses were corrugated sepulchers to the daunted effort of the pioneer to cross the waste. They all run a repair shop and tackle any kind of work that is necessary to get the tourist on his way, they have a water well, almost a necessity to life, they carry tires and limited accessories, furnish lodgings and serve meals, and offer a camp site and, most of them, free wood for camp fires, which service is generally advertised on signs and always highly thought of by the tourist.

Lumbering along the roads, often at night, are the oil company trucks serving these desert stations, sometimes by a haul of as much as 75 miles from bulk storage. Back east a stretch of 15 miles between gasoline pumps on almost any country road would hardly be expected. On the desert there are no



—N. P. N. Staff Photo

The de-luxe or super service station at its best. View into the courtyard of one of the more pretentious type, looking through the driveways past the gasoline pumps.

cross roads and no feeders to the main route.

Actual figures comparing number of gasoline stations in the territory with motor car registrations show how much greater the number of stations is to automobiles in operation. Standard of California territory. at the end of 1924 showed 2,922,000 registrations. With 7330 gasoline stations, this averaged around 260 cars per station.

For comparison, the 11 states in the Mississippi River valley of the Standard of Indiana, at the end of 1924, had about 5,500,000 car registrations and 11,216 gasoline stations, 3013 being Standard of Indiana stations and 8203 other oil company stations. This gave an average of 490 cars per station. In Ohio, for the same period, there were around 3000 gasoline stations, of which the Standard of Ohio had 493, and 1,230,000 cars, around 411 cars per station.

This apparent larger possible average gallonage for the eastern districts named above is offset to some extent by the fact the figures for gasoline stations there do not take account of garages selling gasoline and the gallonage they might take away from the oil companies; while on the Pacific Coast this class of pumps is largely included in the figures for the Independent or privately owned stations. Another factor to be considered is that average gallonage per car runs much higher in California than the average for the country as a whole.

Climatic conditions are likely responsible for the growing up of the privately owned gasoline stations in Los Angeles and in southern California generally until they outnumber oil company stations two to one. These conditions apparently preclude anything like such development in many other cities or sections of the country, but the complete unit stations are coming to be known in eastern cities and how far their development will go remains to be seen.

Census of Los Angeles Stations

As compiled by the Independent Petroleum Marketers' Association, Oct. 1, 1925, from returns made under the city dealer licensing system:

Independent owned stations..	808
Standard Oil Co.	134
Shell Co. of California	107
Pan American Petroleum Co...	55
Richfield Oil Co.	54
Union Oil Co.	40
Julian Petroleum Corp.	29
Wilshire Oil Co.	10
Associated Oil Co.	10
Ventura Refining Co.	9
Vernon Oil Refining Co.	8
Hercules Gasoline Co.	7
Seaboard Petroleum Corp.	4
Premier Refining Co.	4
Sierra Refining Co.	2
Gold Seal Refining Co.	2
Pauley Oil Co.	2
Marine Petroleum Co.	1
Jameson Oil Co.	1
Brown Process Co.	1
Western Refining Co.	1
White Star Oil Co.	1
Total company owned stations	482
Total oil company and independent service stations.	1290

Southern California was endowed by nature as a gorgeous year-round playground. Los Angeles and the smaller towns have the atmosphere of summer resort towns as we know them in the east. Surrounding country has the mountains, beaches, irrigated fruit-raising valleys, the desert. There are practically 365 days a year to visit them, except as business cares or family ties forbid. Gasoline gallonage in the so-called winter is only a few per cent under that of summer months.

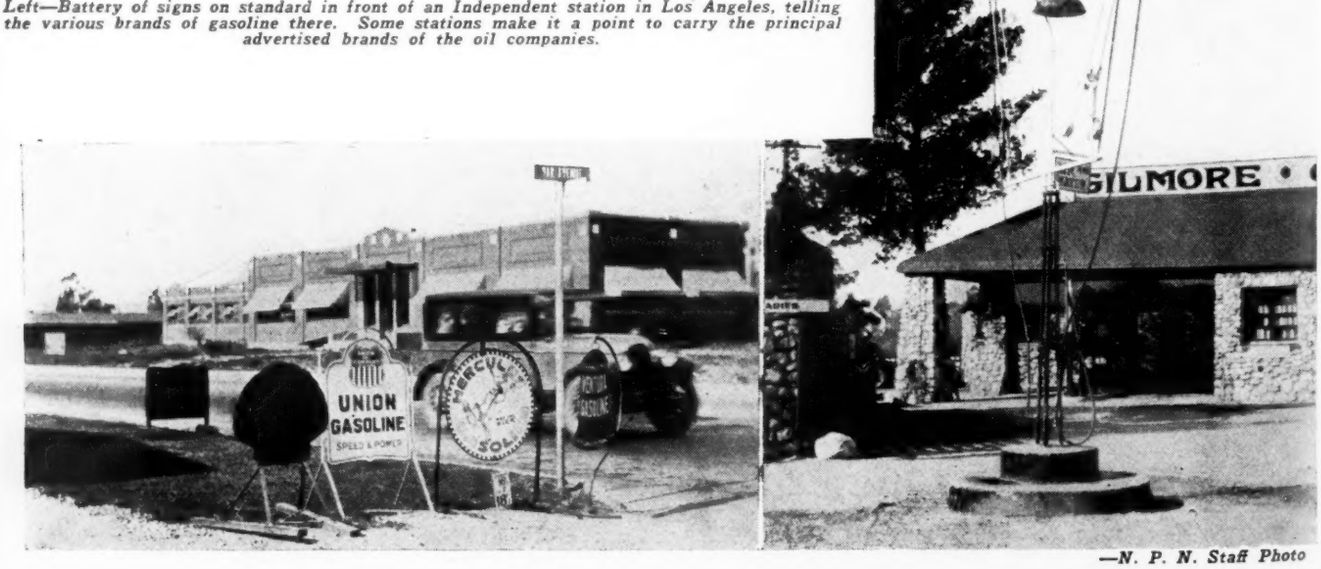
This territory differs a great deal from the northern part of the state. San Francisco has more bustle about it. Families there cannot use their porches with comfort any time of the year because of the lower temperature.

Such business as the servicing of a car in southern California can be carried on as well outdoors as inside the year around. There is no need for buildings to withstand cold or provide for heating installations. Also it is apparent that a car owner thinks more of keeping his machine in good appearance here than back in the east. He can have it washed and polished and be sure, most of the time, that the job will not be ruined by snow or rain in a day or so. The whole of outdoors beckons so enticingly and constantly that it is not to be wondered at that a man thinks of his car first and then his home. If a car could be made comfortable enough to sleep in, he would have little need of a home.

Fusses More With Car

Out of all this has come a condition where a man with a car is a better prospect for the various services supplied at the super service stations. For example, washing and polishing charges, rates for cleaning chassis and so on are higher here than at many points in the east. Also many car owners take advantage of the opportunity to work on their cars themselves while they are being serviced at the stations. It is a common sight to see machines in station yards with the owner fussing about with chamois or wrench while the battery is being tested or some other service given. In districts where winter comes regularly this would be possible only a small portion of the time, if a man were so inclined. Here it seems to be the accustomed habit.

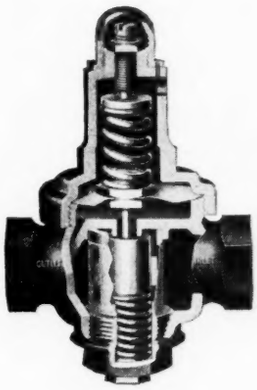
So, from more than one point of view, the great development of the complete service stations here gets back to climatic conditions. No one seems to know exactly how this type of station first got its foothold here. Possibly this was in itself due to the extremely favorable climate. Many places of business in all lines have been started by easterners. These Independent super service stations may have been launched by men coming from the east who



Left—Battery of signs on standard in front of an Independent station in Los Angeles, telling the various brands of gasoline there. Some stations make it a point to carry the principal advertised brands of the oil companies.

—N. P. N. Staff Photo

Announcing 3 New Products!

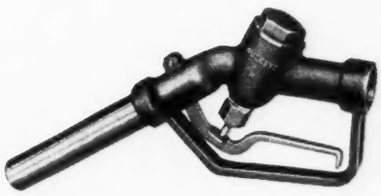


No. 451
Buckeye Air Reducing Valve

The Buckeye Air Reducing Valve has been designed especially for use on air operated gasoline pumps.

A wire screen removes all foreign particles from the air before it enters the valve. It is constructed with a phosphor bronze diaphram which insures long life.

The valve is made so that it can not be set for more than a given pressure and the cap which covers the adjusting screw provides a method of sealing the valve when this is desired.



No. 448
Type "H" Hose Nozzle Valve

Here's an exceptionally fast delivering valve.

It meets all the requirements of the Underwriters' Laboratories and is listed as standard by them, their Misc. Hazard Report No. 1460, dated Nov. 14, 1925.

High grade brass is used throughout its construction. A guard, cast in one piece with the body, is provided to protect the operating lever.

This valve is made in 1" and 1¼" sizes and is now being furnished as regular equipment by the leading pump manufacturers.

No. 450
Flush Type Fill Box and Cap

This new device is installed by embedding it in the cement drive directly over the underground storage tank making it possible to insert a gauge stick and measure the gasoline in the tank.

The body is made of cast iron. Both caps are made of brass and a locking arm which provides a means of locking the opening is securely riveted to the inside cap so there is no possibility of losing it.

Gaskets under both caps make the Fill Box and Cap absolutely water tight. This new product is furnished complete with wrench and can be ordered either with or without the inside locking cap.

With the addition of these new products to our already extensive line of Service Station Equipment, we are in better position than ever before to meet your needs for valves and fittings. It's to your advantage to know all about them. Mail the coupon below.

Buckeye Iron & Brass Works
356 East Third St. Dayton, Ohio
Manufacturers of Quality Brass Goods Since 1860

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Mail Coupon NOW!

Buckeye Iron & Brass Works
356 E. 3rd St., Dayton, Ohio.

Please send me your special Catalog giving information about Filling Station Equipment.

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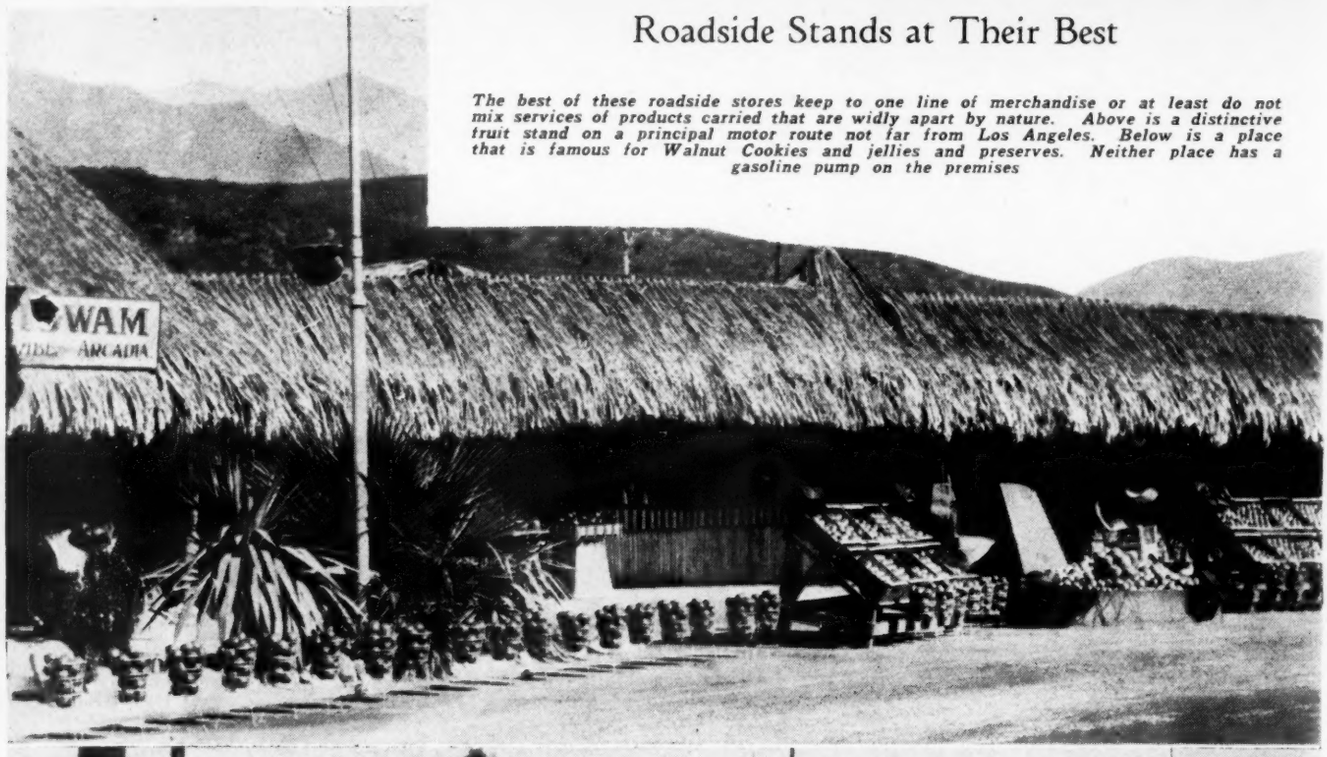
Roadside Stands at Their Best

The best of these roadside stores keep to one line of merchandise or at least do not mix services of products carried that are widly apart by nature. Above is a distinctive fruit stand on a principal motor route not far from Los Angeles. Below is a place that is famous for Walnut Cookies and jellies and preserves. Neither place has a gasoline pump on the premises



—N. P. N. Staff Photo

sought some out-door occupation. Garage work would be especially irksome in this climate. The man of a turn of mind to run a small business of his own found an easy opening, calling for the outlay of relatively small capital, in this kind of an undertaking. There has been a tendency to recognize a man's dependency on his motor car and supply him his necessities and even some of the luxuries of life through the avenue of approach of his interest in his car. It seems that the end is not yet in sight of the trend in this direction. For example, there is a move afoot—and afoot seems hardly the word—to install a chain of de luxe autocamps in the principal southern California resort towns. These would not be the familiar roadside camps of the past—which, like the super service stations, originated in California—but places appealing to the discriminating traveler by auto, where he could have a comfortable and even luxurious cottage for his family and a place for his car under the same roof. He could supply his need for both man and car on the same ground, even though those tastes might be discriminating to the extreme, and arrange beforehand for similar accommodations at other camps on his itinerary. One such station is being completed some miles north of Los Angeles now.

Get Steady Trade

It must not be taken for granted that service stations of this complete type appeal principally to the tourist. Many oil company heads agree that, properly located and conducted, they build up steady patronage from the district that is lost to the oil company. In fact the percentage of tourist business at Los Angeles stations does not run as high as people from the east have been wont to think.

There is no reckoning the "services" or merchandising efforts that are carried on at some of these super stations in southern California. No exaggeration, the Jones family can do its Saturday afternoon shopping complete, for the car first and then for the family, without leaving the grounds, at some of them. The car itself can be cleaned and polished, oiled and greased, filled with gasoline and water, air put in the tires, battery tested, top dressed, a punctured tube repaired, the ignition or lighting system adjusted, or in fact have about anything done to it outside of a major repair necessitating disemboweling it and spreading parts all over the premises. Some stations do go in for complete repair work, no matter how great the chances are of the owner not having enough money to pay for the job after it is done.

While the car is being "fixed," Mrs. Jones can visit a hairdresing shop on the same grounds. At the same time the head of the family—this being written for men anyway—can drop into a barbershop for a haircut, shave and shine. Young "Bill" Jones can while away the time his parents are being groomed by visiting the sandwich shop and the soda fountain, and listening to a demonstration radio outfit, carried as a sideline to the battery shop. If Mrs. Jones doesn't ask her husband's advice, she will likely drop into the flower stand, on the same premises again, as she comes from the hairdresser's shop and pick out a few cut flowers for the house, be it January or June.

All Sell Gasoline

At only a comparatively few stations are such extensive services found. But all degrees and varieties are offered, hardly two of them alike except as they may be run by one individual. They all compete, however, for the gasoline and oil business with the oil company stations.

Understanding of Meaning of Tests Is Needed In Meeting Specifications

By A. P. Bjerregaard
Chief Technologist, Empire Refineries Inc.
Read before W.P.R.A. Meeting, Fort Worth, March 3

THIS paper deals with some tests of petroleum oils in relation to the drawing up of specifications for certain petroleum products. The subject is so large that it has been necessary to select a few of the more common tests used in differentiating gasolines, lubricating oils and fuel oils, and these only will be discussed in this paper.

The subject will be taken up under the heads of:

Gravity
Distillation
Color
Viscosity
Flash and Fire

Gravity

All petroleum oils are regularly subjected to a test for gravity. The natural basis for the expression of this property would be the specific gravity, which shows the relation of the weight of a given volume of the oil to the weight of the same volume of pure distilled water at a certain temperature. However, in the American oil industry the use of specific gravity figures direct has not come into vogue, but instead the so-called Baume scale of degrees, or more recently the A. P. I. scale of degrees is used. This is related to specific gravity by the following mathematical expression:

$$\text{API degrees} = \frac{141.5}{\text{Sp. Gr. } 60/60^\circ\text{F.}} - 131.5$$

Petroleum oils of all kinds expand considerably with increase of temperature. Therefore, the gravity of the oil changes with temperature, and consequently it has been necessary to fix on a standard temperature at which the gravity shall be determined, namely 60° F. in America.

The gravities become lighter as the temperatures become higher. One concrete illustration will suffice to make clear the general trend of the facts. Take an oil of 35° API at 60°F. Then this oil will have API gravity 36 at 74° F, 38 at 101°F. or reading downwards, 34° API at 46°F, 33 at 31½°F.

The rate of change of gravity becomes greater the lighter the gravity of the oil.

Furthermore, fortunately, all petroleum oils, from whatever source, if of the same gravity at the standard temperature, have practically the same rate of expansion for temperature, so that the tables of corrections are true for all petroleum oils, whether paraffin base, asphalt base, or mixed base, and it is also true of all fractions no matter what their boiling points may be, nor whether wide or narrow cuts. Consequently one set of correction tables is equally available for petroleum oils from all sources, greatly simplifying the writing and interpretation of specifications.

Gravity signifies very little concerning most petroleum oils regarding their actual use. Its principal purpose in specifications, if used at all, is to limit the oil specified to a given crude source, since oils equivalent in other respects, but derived from various crudes will differ in gravity. Pure paraffin base oils have lighter gravities than pure asphalt base oils, and mixed base oils are intermediate in gravity, other essential properties being equal.

Distillation Test

The distillation range is one of the most important items for which specifications have to be set in the case of light oils such as gasolines and naphthas. It is therefore vital that the results of the distillation test should be properly interpreted in order that its significance may be properly set forth in terms of specification statement.

In order to get a mental picture of the relationship between the different parts of the distillation fractions a diagram is often drawn, namely the well-known distillation curve.

Sometimes a better mental picture of the relationships of light oils by their distillation data may be obtained by means of another sort of diagram which may be called the differential curve of the distillation test.

For comparison these two sorts of distillation data for these three oils are given in figures in tabular form.

Straight Distillation Curve Figures

	Naphtha	Gasoline	Natural Gasoline
I. P.	264	110	76
10%	290	168	100
20	308	206	114
30	320	236	128
40	328	260	138
50	334	284	150
60	340	302	162
70	350	320	176
80	366	344	196
90	392	378	232
95	418	406	262
E. P.	445	436	306

Differential Curve Figures

Naphtha		Gasoline		Natural Gasoline	
Up to 280	6%	Up to 120	1½%	Up to 80	1½%
280-300	9	120-140	3	80-100	8½
300-320	14	140-160	4	100-120	13½
320-340	30	160-180	4½	120-140	17½
340-360	18	180-200	5½	140-160	17
360-380	9½	200-220	6	160-180	14
380-400	5½	220-240	7	180-200	9½
400-420	3½	240-260	8	200-220	6
Above 420	3	260-280	9	220-240	4
		280-300	12	240-260	3
		300-320	10½	260-280	2
		320-340	9	280-300	1½
		340-360	6½	Above 300	½
		360-380	5		
		380-400	3½		
		400-420	2½		
		Above 420	1		

The advantages of the differential form of representation lies in the ease with which a wide range product is distinguished from a narrow range one, and more especially in the way it indicates clearly the main portion of the distillate by the location of the peak of the curve.

As is well known the government in making its specifications for gasolines, has practically designated a certain shaped curve of the integration type, by setting certain figures that the distillation test must meet throughout the distillation range. Whatever may be thought of the wisdom of the government's particular choice of curve, there can be no doubt that whatever distillation figures are used in drawing up specifications for gasolines, their relationships on one or both these types of curves must be taken into consideration.

Color

Color has been a very important item in most specifications heretofore drawn up for petroleum products, but except in special instances color really has no particular significance as related to the use of petroleum oils.

Two systems of color statement are in use at present in the petroleum industry and since they both enter largely into questions of specification writing they will be considered here.

Saybolt Chromometer for Light Oils

The principle used in the determination of the color of light gravity and nearly colorless oils such as gasoline is different from that used in determining the color of more highly colored oils such as lubricating oils.

In the light colored oils, two fixed color standards, one exactly twice the density of the other, are used. Therefore, only one color tint is made use of, with which different thicknesses of oil are compared. The color scale, therefore, bears a proportionate relationship to the actual depth of color, or rather an inverse relationship. The real basis underlying this scale is the color of an aqueous solution of potassium bichromate.

The use of two color glasses instead of one has the effect of cutting the curve into two parts and lifting the one part up higher on the scale of inches. In other words the length, or depth of oil column is increased for the darker oils, making the reading of their colors easier.

The colors of lubricating oils are taken in the opposite way, since a fixed depth

of oil is compared with variable color standards. These color standards are of glass and are based on the Lovibond color system.

As the color numbers of the lubricating oils become higher there is more red and more yellow in the make up of the color glasses, and in several of the darker glasses there is also a small amount of blue. The increments of color, however, are not uniform, either for the red or for the yellow, so that curves to represent their relationships show considerable irregularities.

Another way of showing the comparison of colors is to blend a light colored oil with a dark one; thus a series of blends of a No. 2 colored oil with a No. 8 colored oil showed these figures:

API Color	No. 8 Color Oil
No. 2	0
No. 2½	1.4%
No. 3	3.1%
No. 3½	7.0%
No. 4	12.7%
No. 4½	19.4%
No. 5	31.3%
No. 6	46.4%
No. 7	70.0%
No. 8	100.0%

Diluting dark colored oils with a colorless naphtha gives a new series of colors differing markedly in depth of color from what would naturally be expected, being very much darker. Thus a series of standard colored oils were diluted on the 15/85 per cent basis and the following colors were obtained.

Original API Color	API Color of the 15-85 Dilution
No. 2	No. 1⅝
No. 2½	No. 1¾
No. 3	No. 1⅞
No. 3½	No. 1⅞
No. 4	No. 1¾
No. 4½	No. 2¼
No. 5	No. 2½
No. 6	No. 3⅛
No. 7	No. 3½
No. 8	No. 4

The diluted colors, therefore, instead of being 15 per cent of the original color are in fact slightly darker than ½ of them. This fact has a very important bearing on that phase of specification of color of lubricating oils in which the oils are too dark for direct observation and the color of the diluted oil is specified.

Remembrance of these facts relating to color determination and color nomenclature will help in writing and in interpretring the color items of petroleum specifications.

Viscosity

The most important item in the specifications usually set up for lubricating oils is the viscosity, because, for the class of mineral oils, viscosity has a relationship to the lubricating value. The higher the viscosity the heavier the loads per square inch of bearing surface the oil will support.

If an oil thinner in viscosity is used than the load requires, the oil will be forced out from between the bearing surfaces and metallic contact will ensue, leading to the destruction or injury of the bearing. However, the viscosities required are much less than those usually called for. On the other hand the higher the viscosity the more energy is absorbed in internal friction in the oil itself. Therefore, an important rule in lubrication engineering is "Use the lowest viscosity oil that will stay in the bearing, under all the conditions to which that bearing will be subjected." The use of too high a viscosity oil results in loss of power due to this internal friction, which loss may become considerable with very heavy bodied oils.

Viscosity is defined in oil technology as the time in seconds it takes for a standard amount of the oil in question to flow through a certain standard sized hole, under standard conditions of head and temperature. In order to get these standards fixed a certain apparatus known as the Saybolt Universal viscosimeter is used in this country for lubricating oils. Most foreign countries make use of other instruments, such as the Engler, the Redwood, or the Barbey.

Since all the other conditions are fixed in any one type of instrument, only one variable remains, namely, the temperature, and it is controllable in all these viscosity testing machines.

All oils become appreciably thinner in body, or in other words have lower viscosities the higher the temperature. At the temperature probably prevailing on the inner wall of the internal combustion engine most lubricating oils have about the same viscosity.

It should be remembered particularly that the viscosities are all extremely high at 70° F. and all are very low and practically identical at 250° F. It will also be noted that at 100° F., at which most commercial viscosities are taken, the slope of the curves are all quite steep. This signifies that small differences in the temperature of the oil and its surrounding apparatus when measuring the viscosity will have a large influence on the viscosity figure obtained. This source of error is very much smaller at 210° F.

These facts must be borne in mind in designing specifications of lubricating oils in order to avoid errors.

Flash Point and Fire Point

The flash point is supposed to show the temperature at which the oil undergoing test will give off enough inflammable vapors to ignite momentarily, the fire becoming extinguished instantly for lack of fuel. The fire point is likewise supposed to show the temperature at which such large volumes of vapor are given off that they will continue to burn, once having been set on fire. As a safety factor, or as an indication of the inflammability, therefore, the flash and fire points are important items in specifications of various petroleum products.

This test, when the open cup method is used, is extraordinarily sensitive to the effect of surrounding conditions. This sensitiveness is due to the fact that what is really taking place is a race between the evolution of inflammable vapors and the removal of these same vapors by air currents and by diffusion. In order to have this race always under the same conditions, the air currents must be always the same, and the rate of heating must be always the same.

If the temperature is raised too fast the vapors generated will not have time to be removed and the flash indicated will be too low. If the air currents are too vigorous the vapors will be blown away and it will take longer for a sufficiently explosive blend of vapor and air to accumulate, and therefore the flash indicated will be too high. If the rate of heating is too slow the vapors will have more time to be removed by the air currents and so the flash will be too high.

The introduction of the iron plate under the Cleveland Open Cup several years ago was in reality an attempt to control the air currents arising from the heating flame, or other heating element, below, and it has been fairly successful in making the flash test more concordant.

Closed Cup Less Sensitive

The closed cups are not so sensitive because air currents have very much less access to the vapor chamber, and therefore the vapors are not readily blow away, with the consequence that the flash is always decidedly lower in a closed cup than in an open one. At the same time concordant results by various operators are more easily obtainable by the closed cup properly manipulated.

Small proportions of low flash oils in blends have quite a large effect on lowering the flash point on account of the differential evaporation of such more volatile oils, but if the proportion is too small, or the volatility is so great that all of it is removed before a flash is reached, then the low flash oil will have no effect on the flash point of the higher flash oil of the blend. So here also there is a race between the removal of the low flash constituent and the accumulation of sufficient vapor to lead to a flash.

It will be seen by these facts that the flash point figure of an oil is not necessarily that at which the oil will flash in use. Indeed the conditions in use are practically always so very different from the conditions obtaining during the test that no value can be placed on the flash point figure itself as an absolute factor of safety, or of inflammability. Nevertheless, bearing in mind the facts concerning the variability under variable conditions, the relative flash points of two or more oils, give a good indication of the relative safety or relative inflammability under the conditions of use.

Here as in all other cases it must be remembered that the figures set down have no significance in themselves and by themselves, but they must be properly interpreted in relation to the characteristics of the oil in the particular use it is to fill.

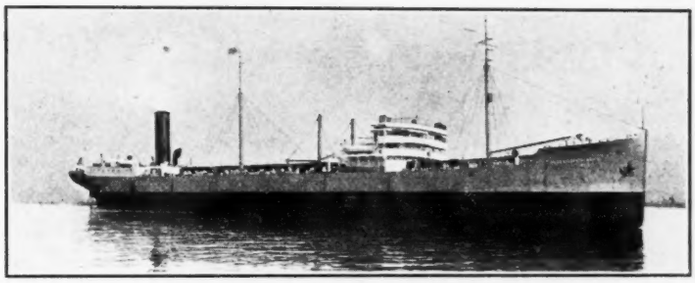
All this discussion on flash point is equally applicable to the fire point, so it will not be further considered.

Concluding Remarks

These few thoughts on this limited group of tests illustrate the importance, for intelligent specification writing, of a proper understanding of the factors underlying and influencing the test methods, and their results, as well as the necessity of a thorough knowledge of the properties of the oils themselves.

In other words, before setting down any thing in a specification, the question to be asked and answered is "What is the significance of this test and its results as regards the use this oil is to be put to?"

SUN OILS



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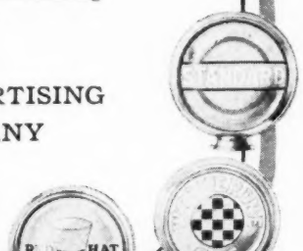

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of prominence.

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This relates primarily to the consumer's side of the matter.

On the other hand the refiner in setting forth the characteristics of his products in sets of specifications must also bear in mind these underlying principles and by suitably varying the items of specification used in dealing with various consumers employing similar oils differently, he can skilfully adjust the specifications of his product and his statement of their properties so as to best meet the properly thought out requirements of his customers.

Thus both producer and consumer of petroleum products will have their interests advanced and each will be benefited by a careful study of the characteristics of oils and the variations of these characteristics with varying conditions, and of the principles underlying the figures used in constructing specifications.

Gulf Pays Million For Panhandle Acreage

Staff Special

FORT WORTH, March 5.—Dial and Whittenberg ranch properties in the Hutchinson county division of the Texas Panhandle development will be operated by the Gulf Production Co., under terms of a trade completed by this company with Walter D. Cline, individual operator of Wichita Falls, and the Panhandle Refining Co., of which Roy B. Jones of Wichita Falls is president.

The Gulf acquired for cash consideration of $1,000,000 a one-half interest in leaseholds covering the two ranches, aggregating 11,573 acres. The property, which includes producing oil wells but not oil in lease storage, will be operated by the Gulf.

Under the terms of the trade the Gulf combined its existing leaseholds on parts of the Dial and Whittenberg ranches, totaling about 3000 acres, with the holdings of Cline and the Panhandle Refining Co. Then a half interest in the whole became the Gulf's share in the property on payment of the cash consideration named early in the present week.

The Dial ranch in southern Hutchinson county is now owned in fee by Messrs. W. B. Hamilton, N. H. Martin and J. J. Perkins of Wichita Falls and George Martin of Denver. The first producing well in Hutchinson county was drilled by the Gulf on the Dial land.

The deal was closed at Fort Worth and Wichita Falls by W. B. Pyron, third vice president of the Gulf, of Houston, and F. J. Adams, general agent, of Fort Worth.

KING CITY, MO.—Rufus H. Limpp, formerly owner of the King City Oil Co. here, has just completed a bulk and service station at St. Joseph, Mo., at the intersection of King Hill Ave. and Lake Blvd. The business will be carried under the name of the King Hill Oil Co., and will be conducted by V. K. Smith.

Crude Stocks East of California Decline 4,000,000 Barrels

By Roger B. Stafford
N. P. N. Staff Writer

CLEVELAND, March 8

STOCKS of refinable crude oil in the United States continued to decrease in January when decreased domestic production was almost balanced with decreased charges of domestic and foreign crude to stills, and increased exports almost balanced with increased imports.

Stocks of crude oil east of California, both foreign and domestic, declined approximately 4,000,000 barrels at tank farms and in pipe lines. Refiners' stocks increased 424,000 barrels. In California drafts on stocks of light crude amounted to 108,000 barrels but stocks of heavy crude and fuel oils were increased 1,000,000 barrels.

Gasoline stocks again rose to a new high record, being about 2,000,000 gallons greater than on March 31, 1925, the previous peak. Gas and fuel oil stocks east of the Pacific coast and kerosene stocks decreased but lubricating oil and paraffin wax stocks increased.

Total stocks of crude oil east of California on Jan. 31, according to the report of G. R. Hopkins, petroleum economist of the Bureau of Mines, were 288,250,000 barrels as compared with 292,288,000 barrels on Dec. 31, 1925. Of the 288,250,000 barrels 212,240,000 barrels were of 24° A.P.I. gravity or lighter and the remainder heavier than 24°. The light crude stocks declined 4,640,000 barrels and heavy crude stocks increased 180,000 barrels.

Stocks of light refinable crude in California amounted on Jan. 31 to 44,215,000 barrels as compared with 44,323,000 barrels on Dec. 31 and heavy crude to 82,866,000 barrels as compared with 81,806,000 barrels.

Daily average production in the United States in January amounted to 1,924,397 barrels, a decline of 41,516 barrels as compared with December daily average production, or 2.1 per cent.

In only one field was production increased in January considerably above the December average. That field was the Texas Gulf Coastal where daily average production reached 80,710 barrels as compared with 70,871 barrels in December. Slight increases were made in Colorado, north Louisiana, Pennsylvania and Salt Creek. All other fields showed declines, Oklahoma average production falling more than 12,000 barrels and north, central and west Texas the

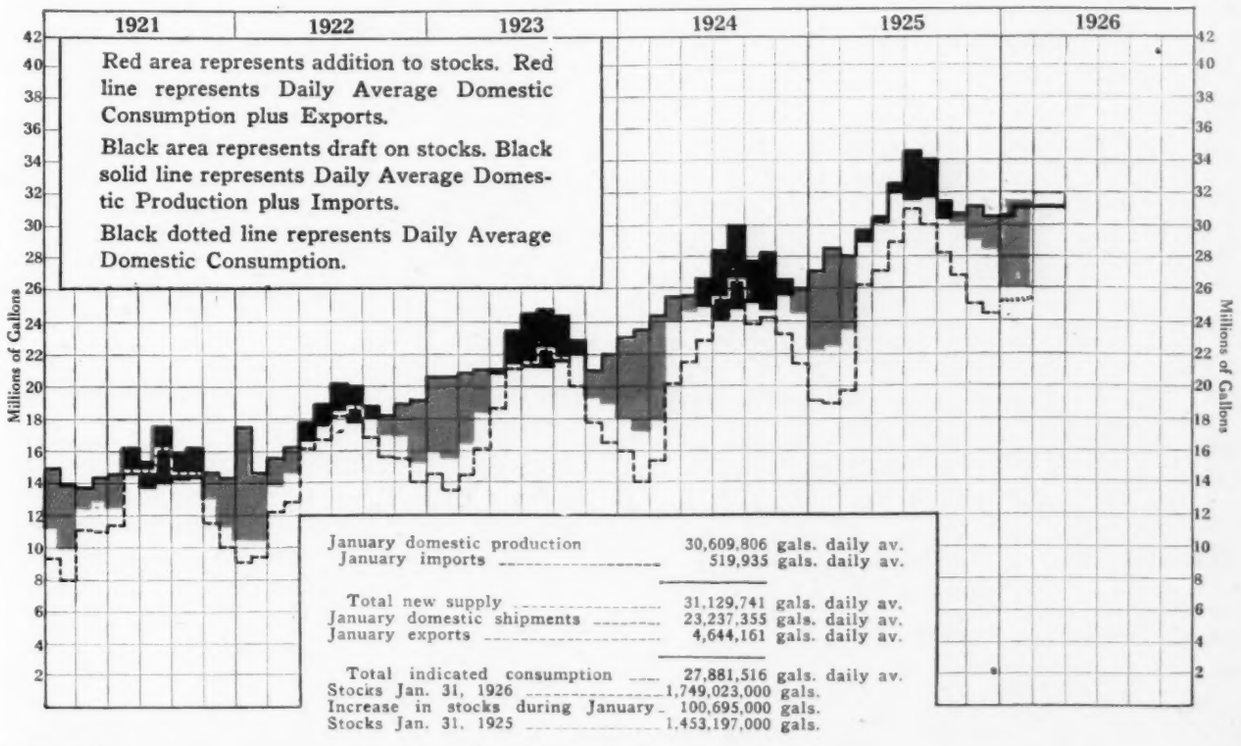
Table No. 1—Production, Imports, Exports and Deliveries of Crude in January, 1926

(Barrels)

Fields	Jan. Daily Average Prod.	Dec. Daily Average Prod.	Jan. 25 Daily Average Prod.	†Jan. Daily Average Deliveries	†Dec. Daily Average Deliveries	†Jan. 25 Daily Average Deliveries
Appalachian	69,935	72,290	70,419	68,645	78,290	68,935
Lima-Indiana	5,064	5,064	5,355	6,161	7,129	6,581
Illinois-S. W. Indiana	22,226	22,226	23,161	21,419	22,065	23,968
Mid-Continent	1,022,789	1,065,752	1,066,636	1,147,581	1,186,516	1,152,677
Gulf Coastal	90,742	81,774	64,956	117,258	99,516	97,097
Rocky Mountain	98,484	97,839	84,839	94,710	88,290	81,161
California	615,147	620,958	604,622	584,451	624,322	557,307
Total Domestic	1,924,387	1,965,903	1,919,968	†2,040,225	†2,106,128	†1,987,736
Imports	151,226	140,645	226,613	.....	.....	.....
Deliveries of foreign crude	.....	.....	.....	148,613	146,194	230,677
Exports	.....	.....	.....	38,161	28,290	37,065
Total New Supply	2,075,613	2,106,548	2,146,581	.....	.....	.....

†Includes exports.

Gasoline Production and Consumption


1921
1922
1923
1924
1925
1926
Red area represents addition to stocks. Red line represents Daily Average Domestic Consumption plus Exports.
Black area represents draft on stocks. Black solid line represents Daily Average Domestic Production plus Imports.
Black dotted line represents Daily Average Domestic Consumption.
Millions of Gallons
January domestic production 30,609,806 gals. daily av.
January imports 519,935 gals. daily av.
Total new supply 31,129,741 gals. daily av.
January domestic shipments 23,237,355 gals. daily av.
January exports 4,644,161 gals. daily av.
Total indicated consumption 27,881,516 gals. daily av.
Stocks Jan. 31, 1926 1,749,023,000 gals.
Increase in stocks during January 100,695,000 gals.
Stocks Jan. 31, 1925 1,453,197,000 gals.

same amount. California production was down more than 5000 barrels daily average. Arkansas production was off 18,000 barrels daily average.

Above January, 1925, Average

The January daily average production for the whole country was only a little more than 5000 barrels greater than in January, 1925, although the number of producing completions was 1164 as compared with 883 in the preceding January.

There were small increases in pipe line and tank farm stocks in Kentucky, Illinois-southwest Indiana, north Louisiana-Arkansas, and Rocky Mountain districts. Elsewhere east of California pipe line and tank farm stocks decreased. Refinery stocks of crude decreased at the Texas Gulf Coast, the Indiana-Illinois district and Louisiana Gulf Coast domestic but not foreign.

Shipments of California crude through the Panama canal to the East Coast fell off in January when 116,000 long tons of crude and 217,000 long tons of refined products passed eastward. In December shipments were 187,000 long tons of crude and 238,000 long tons of refined oils. In January, 1925, the movement consisted of 189,000 long tons of crude and 67,000 long tons of refined oil. A long ton consists of approximately seven barrels of oil.

Complete crude production, stocks and deliveries statistics are in tables Nos. 1, 2 and 3. The chart showing the crude oil situation is on the cover of this issue.

Production of gasoline at United States refineries in January averaged 30,609,806 gallons a day, a figure that has been exceeded only three times before—last June, July and August. The production exceeded December daily average production by 450,000 gallons and January, 1925, daily average production by 3,800,000 gallons. The increased output in January was accomplished in spite of a reduction in charges to stills of approximately 53,000 barrels of crude, unfinished oils and natural gasoline from the December charges.

January shipments of gasoline to the domestic trade averaged 23,237,355 gallons, a decline of more than 1,000,000 gallons daily average from December shipments. This was a relatively smaller decline than from December, 1924, to January, 1925.

As compared with gasoline statistics for January, 1925, gasoline production in January, 1926, was 14.1 per cent greater; imports were 11.5 per cent larger, and total new supply 14 per cent larger. Domestic demand was 21.5 per cent larger, exports 45.4 per cent larger, and total demand 24.9 per cent larger. Stocks on Jan. 31, 1926, were 20.3 per cent larger than on Jan. 31, 1925. However, at the January, 1926, rate of demand stocks at the end of that month were equivalent to 70 days' supply and at the end of January, 1925, to 71 days' supply. Stocks of Dec. 31, 1925, were equivalent to 63 days' supply at the December rate of total demand.

Total Motor Fuel Output

The foregoing figures are for gasoline turned out by refineries only. The Bureau of Mines now compiles a table covering production of all motor fuel including natural gasoline and benzol

(Continued on Page 81)

Table No. 2—Daily Average Production by States

(Amount in Barrels)

States	Jan.	Dec.
Arkansas	175,322	193,355
California	615,147	620,958
Colorado	5,645	5,097
Illinois	20,516	20,516
Indiana, southwest	1,710	1,710
Northeastern	322	354
Kansas	103,388	103,645
Kentucky	16,129	16,648
Louisiana, Gulf Coast	10,032	10,903
Rest of State	43,484	42,968
Montana	12,065	12,323
New Mexico	4,226	4,258
New York	4,742	4,774
Ohio, Central—Eastern	13,322	14,903
Northwestern	4,742	4,710
Oklahoma, Osage County	65,129	67,484
Rest of State	378,111	388,494
Pennsylvania	21,097	20,452
Tennessee	97	190
Texas, Gulf Coast	80,710	70,871
Rest of State	257,355	269,806
West Virginia	14,548	15,323
Wyoming, Salt Creek	56,774	55,871
Rest of State	19,774	20,290
Total U. S.	1,924,387	1,965,903
Classification by Gravity		
24° A.P.I. gravity and lighter	1,369,581	1,386,000
Heavier than 24°	554,806	579,903

Table No. 3—Stocks of Crude Oil

(Domestic unless otherwise specified, amounts in thousands of barrels)

Districts	At Refineries Jan. 31 1926	Dec. 31 1925	Jan. 31 1925
East Coast:			
Domestic	4,851	4,801	8,523
Foreign	2,754	2,650	2,020
Appalachian	1,546	1,507	1,282
Indiana, Illinois, etc.	1,492	1,318	1,855
Oklahoma, Kansas, etc.	3,594	3,422	5,507
Texas Gulf Coast:			
Domestic	5,521	5,616	4,897
Foreign	286	341	543
Texas, rest of state	1,155	944	1,138
Louisiana Gulf Coast:			
Domestic	2,847	3,242	3,755
Foreign	1,556	1,197	1,623
Louisiana-Arkansas	470	656	292
Rocky Mountain	1,509	1,463	931
U. S. east of Calif.	27,581	27,157	32,366
At Tank Farms, in Pipe Lines and Elsewhere than Refineries			
Appalachian	6,712	6,745	7,060
Kentucky	1,820	1,747	2,272
Lima-Indiana	937	971	1,183
Illinois-S. W. Indiana	10,607	10,582	10,845
Okla.-Kans.-Texas except Gulf	149,156	153,513	174,412
N. Louisiana-Ark	43,411	42,923	33,479
Gulf Coast	18,441	19,263	19,203
Rocky Mountain	29,097	28,980	28,786
Foreign at Atlantic	80	104	187
Foreign at Gulf	408	303	406
Total east of Calif.	288,250	292,288	310,199
California:			
20° and lighter	44,215	44,323	42,102
Heavier than 20°	82,866	81,806	56,812
Grand Total	415,331	428,417	409,113
CLASSIFICATION BY GRAVITY			
Crude elsewhere than at refineries east of California			
24° and lighter	212,240	216,882	.....
Heavier than 24°:			
Domestic	47,941	47,842	.....
Foreign	488	407	593

Table No. 4—Year's Gasoline Situation in a Nutshell. (Gallons)

	Production	Imports	Exports	Domestic Consumption	Stocks
July 1925	966,908,000	16,845,000	105,107,000	963,072,000	1,610,790,000
August	972,689,000	13,180,000	124,042,000	931,901,000	1,540,716,000
September	906,109,000	7,633,000	91,441,000	848,867,000	1,514,150,000
October	944,433,000	9,009,000	106,570,000	831,774,000	1,529,248,000
November	922,058,000	15,684,000	118,999,000	758,111,000	1,589,880,000
December	934,549,000	13,448,000	129,850,000	755,822,000	1,648,328,000
1925 Total	10,849,127,000	160,137,000	1,330,314,000	9,325,094,000	.....
January 1926	948,904,000	16,118,000	143,969,000	720,358,000	1,749,023,000
January 1925	831,652,000	14,448,000	98,962,000	588,412,000	1,453,198,000

Table No. 5—Gasoline Production by the Various Methods in January, 1926

(Gallons)

	Straight run	%	Cracked	%	Nat.-gas gasoline	%	Total
East Coast	77,407,000	52	54,423,000	37	15,918,000	11	147,748,000
Appalachian	25,985,000	69	10,343,000	28	1,092,000	3	37,420,000
Indiana and Ill.	72,523,000	60	44,960,000	37	2,856,000	3	120,339,000
Oklahoma and Kansas	112,461,000	68	44,207,000	27	7,938,000	5	164,606,000
Texas	109,439,000	53	81,177,000	39	15,708,000	8	206,324,000
Louisiana and Ark.	38,152,000	66	17,752,000	30	2,184,000	4	58,088,000
Rocky Mountain	24,680,000	51	21,270,000	44	2,184,000	5	48,134,000
California	149,893,000	90	182,000	..	16,170,000	10	166,245,000
U. S. Total	610,540,000	64	274,314,000	29	64,050,000	7	948,904,000
U. S. Total 12-25	601,491,000	64	264,178,000	28	68,880,000	8	934,549,000
Texas and La. Gulf Coast*	107,360,000	51	87,147,000	42	14,616,000	7	209,123,000

*Included above under Texas, Louisiana and Arkansas.

Table No. 6—Natural Gasoline January Output, Demand and Stocks

(Gallons)

Regions	Natural Gasoline Production (net)*	Natural Gasoline Stocks end of month	Blended Motor Fuel Natural gasoline used in blends	Blended Motor Fuel Naphtha or other oil used in blends	Blended Motor Fuel Stocks end of month
Appalachian	11,200,000	3,063,000	246,000	461,000	469,000
Indiana, Illinois, etc.	1,800,000	241,000	48,000	8,000	20,000
Oklahoma, Kansas, etc.	38,300,000	8,196,000	2,209,000	3,893,000	1,957,000
Texas	17,600,000	3,034,000	284,000	736,000	313,000
Louisiana and Arkansas	5,800,000	1,226,000	28,000	.....	1,000
Rocky Mountain	2,300,000	333,000	78,000	98,000	475,000
Total east of Calif.	77,000,000	16,093,000	2,893,000	5,196,000	3,235,000
California	29,000,000	887,000	Not available		20,000
Total United States	106,000,000	16,980,000	.....	.....	3,255,000
Daily average	3,419,000	.....	.....	.....	.....

*1 per cent estimated.

Table No. 7—Supply, Demand and Stocks of Heavier Products

	Production	Imports	Exports*	Domestic Demand	Stocks end of Period
KEROSENE (Gals.):					
November, 1925	212,665,000	92,000	85,936,000	147,268,000	314,554,000
December, 1925	223,780,000	53,000	76,974,000	162,223,000	299,190,000
Total 1925	2,510,334,000	3,012,000	880,238,000	1,694,874,000	.....
January, 1926	214,761,000	15,000	78,793,000	147,555,000	287,618,000
January, 1925	247,727,000	73,000	73,918,000	140,200,000	394,638,000
LUBRICANTS (Gals.):					
November, 1925	110,467,000	49,000	29,643,000	73,556,000	293,912,000
December, 1925	113,857,000	36,000	39,770,000	62,832,000	305,203,000
Total 1925	1,301,016,000	1,574,000	407,325,000	859,703,000	.....
January, 1926	111,255,000	90,000	30,541,000	68,168,000	316,839,000
January, 1925	103,164,000	58,000	39,764,000	52,710,000	280,389,000
WAX (Lbs.):					
November, 1925	49,087,000	1,125,000	31,107,000	21,523,000	111,231,000
December, 1925	52,859,000	807,000	32,356,000	16,150,000	116,391,000
Total 1925	590,576,000	14,589,000	332,916,000	245,564,000	.....
January, 1926	52,630,000	631,000	29,051,000	17,828,000	122,773,000
January, 1925	54,310,000	1,030,000	31,929,000	24,111,000	89,006,000
GAS AND FUEL OILS (Gals.):					
November, 1925	1,229,771,000	22,655,000	127,098,000	.....	†1,145,181,000
December, 1925	1,298,045,000	17,530,000	149,798,000	.....	†1,036,619,000
Total 1925	15,279,072,000	508,930,000	1,517,049,000	.....	.....
January, 1926	1,231,400,000	36,242,000	151,696,000	.....	† 977,178,000
January, 1925	1,171,402,000	44,246,000	103,092,000	.....	† 773,853,000

*Except wax, include shipments to Alaska, Hawaii, and Porto Rico.
†Stocks east of California only.
NOTE.—Since the December report was issued, many revised figures for imports and exports have been received and are used above.

Table No. 8—Runs to Stills in U. S. During January

(Barrels)

Districts	Crude Oils Domestic	Crude Oils Foreign	Unfinished Oils	Natural-gas gasoline	Total Oil run to Stills	Daily Av. Runs in Jan 26	Daily Av. Runs in Dec. 25
East Coast	7,361,000	1,948,000	589,000	379,000	10,277,000	334,742	359,871
Appalachian	2,135,000	.....	118,000	26,000	2,279,000	73,516	70,774
Ind., Ill., etc.	5,518,000	.....	171,000	68,000	5,757,000	185,709	184,322
Okla., Kans., etc.	7,741,000	.....	189,000	189,000	8,119,000	261,903	263,903
Texas	11,706,000	741,000	689,000	374,000	13,210,000	426,129	443,484
Louisiana and Ark.	5,500,000	311,000	228,000	52,000	6,091,000	196,484	190,226
Rocky Mountain	2,170,000	.....	492,000	52,000	2,714,000	87,548	94,613
California	16,426,000	.....	490,000	383,000	17,301,000	558,097	566,484
U. S. Total	58,557,000	2,700,000	2,966,000	1,525,000	65,748,000	2,120,900	2,174,000
Daily av. Jan. 26	1,888,900	87,100	95,700	49,200	2,120,900	.....	.....
Daily av. Dec. 25	1,933,600	93,700	109,900	52,900	2,174,000	.....	.....
Texas Gulf Coast	9,030,000	441,000	630,000	347,000	10,448,000	337,032	343,129
La. Gulf Coast	4,066,000	311,000	175,000	1,000	4,553,000	146,871	141,226

(Continued from Page 78)

blends. The total output of motor fuel in January was 988,400,000 gallons, a daily average of 31,900,000 gallons as compared with a total of 970,400,000 gallons, a daily average of 31,300,000 in December. The following table gives a comparison of January and December output:

(Gallons)	January	December
Gasoline produced at refineries	948,900,000	934,500,000
Nat. gasoline produced at plants	106,000,000	107,600,000
Benzol production*	7,600,000	7,400,000
Less natural gasoline blended at refineries	64,100,000	68,900,000
Less nat. gasoline run through ref. pipe lines	10,000,000	10,200,000
Total U. S.	988,400,000	970,400,000
Daily average	31,900,000	31,300,000

*Estimated with production of by-product as basis.

Gasoline recovery from crude oil was the highest rate ever recorded, the Bureau report says, amounting to 37 per cent. Cracking was more extensively used, the report indicates, and 29 per cent of refinery gasoline output was from this method of manufacture. In December cracking produced 28 per cent of refinery gasoline. Seven per cent of the refinery gasoline was natural gasoline, as compared with 8 per cent in December. Cracking operations were increased in the Atlantic Coast, Indiana-Illinois, and Oklahoma-Kansas districts.

Fewer Plants Operating

The report on January operations was for 317 plants, which were operated at 77 per cent of their rated capacity. In

Table No. 9—Output and Losses at Refineries During January, 1926

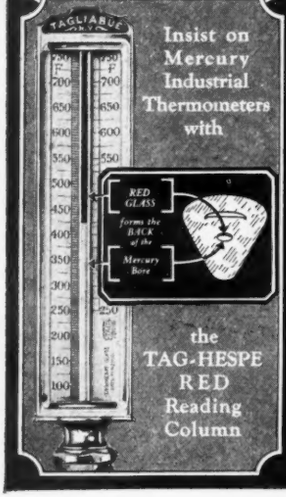
Districts	Gasoline (Gals.)	Kerosene (Gals.)	Gas and Fuel Oils (Gals.)	Lubricants (Gals.)	Wax (Lbs.)	Coke (Tons)	Asphalt (Tons)	Other finished products (Gals.)	Unfinished products (Gals.)	Losses (Bbls.)
East Coast	147,748,000	47,626,000	160,962,000	31,330,000	21,653,000	16,320	60,921	2,847,000	.....	480,000
Appalachian	37,420,000	13,223,000	20,860,000	15,375,000	7,881,000	1,480	.....	1,160,000	983,000	123,000
Ind., Ill., etc.	120,339,000	16,768,000	60,266,000	13,448,000	6,152,000	16,418	17,979	6,106,000	6,250,000	219,000
Okla., Kans., etc.	164,606,000	32,003,000	115,165,000	8,497,000	3,137,000	7,223	669	1,277,000	5,228,000	278,000
Texas	206,324,000	50,567,000	220,575,000	28,427,000	4,871,000	13,851	16,086	566,000	18,074,000	559,000
Louisiana and Ark.	58,088,000	22,604,000	126,932,000	2,152,000	4,510,000	11,141	27,179	3,743,000	28,705,000	100,000
Rocky Mountain	48,134,000	6,775,000	35,865,000	2,067,000	4,426,000	7,268	1,689	32,000	16,031,000	49,000
California	166,245,000	25,195,000	490,775,000	9,959,000	.....	.....	37,860	4,919,000	*12,831,000	187,000
U. S. TOTAL	948,904,000	214,761,000	1,231,400,000	111,255,000	52,630,000	73,701	162,383	20,650,000	88,102,000	1,995,000
Daily av. Jan. 26	30,610,000	6,928,000	39,723,000	3,589,000	1,698,000	2,377	5,238	666,000	2,842,000	64,000
Daily av. Dec. 25	30,147,000	7,219,000	41,872,000	3,673,000	1,705,000	2,378	5,018	654,600	3,015,000	65,000
Texas Gulf Coast	163,830,000	42,586,000	169,522,000	26,836,000	4,553,000	12,581	16,086	95,000	8,633,000	495,000
La. Gulf Coast	45,293,000	20,657,000	82,696,000	2,144,000	4,510,000	10,501	25,508	3,541,000	25,446,000	59,000

*Includes 5,995 barrels net tops produced.

Table No. 10—Stocks Held by Refining Companies on January 31, 1926

Districts	Gasoline (Gals.)	Kerosene (Gals.)	Gas and Fuel Oils (Gals.)	Lubricants (Gals.)	Wax (Lbs.)	Coke (Tons)	Asphalt (Tons)	Other finished products (Gals.)	Unfinished Oils (Bbls.)
East Coast	359,992,000	56,431,000	232,034,000	119,774,000	53,750,000	18,634	81,245	4,800,000	6,236,000
Appalachian	38,585,000	10,026,000	24,708,000	36,782,000	15,332,000	744	79	2,391,000	934,000
Indiana and Ill.	206,972,006	36,048,000	40,275,000	33,797,000	25,033,000	4,705	15,662	22,689,000	3,211,000
Oklahoma and Kans.	146,778,000	15,865,000	154,925,000	19,611,000	3,897,000	21,049	825	3,404,000	1,977,000
Texas	231,946,000	53,661,000	313,798,000	59,723,000	9,145,000	69,319	10,835	459,000	7,394,000
Louisiana and Ark.	177,248,000	15,906,000	152,148,000	4,534,000	4,500,000	57,291	27,404	1,882,000	2,454,000
Rocky Mountain	175,030,000	14,638,000	59,290,000	7,728,000	10,995,000	58,824	7,763	43,000	1,836,000
California	412,472,000	85,043,000	.....	34,890,000	121,000	.....	30,751	9,004,000	*13,838,000
U. S. TOTAL	1,749,023,000	287,618,000	977,178,000	316,839,000	122,773,000	230,566	174,564	44,672,000	37,880,000
U. S. Total Dec. 31, 1925	1,648,328,000	299,190,000	1,036,619,000	305,203,000	116,391,000	238,403	159,424	41,884,000	38,394,000
Texas Gulf Coast	204,717,000	40,423,000	267,206,000	57,890,000	8,884,000	64,577	10,835	169,000	6,879,000
La. Gulf Coast	172,615,000	15,405,000	114,063,000	4,528,000	4,500,000	54,876	27,356	1,829,000	2,190,000

Insist on Mercury Industrial Thermometers with



the TAG-HESPE RED Reading Column

TAG

One of a series of brief discussions of the standard tests of petroleum products. See announcement in N. P. N. of Februarg 24.

No. 1--Gravity

This test comes first, for it is the fundamental oil test.

Throughout the oil industry gravity is expressed in "degrees A. P. I. at 60° F." It therefore must be determined with an A. P. I. scale hydrometer, the reading of which must be corrected, because the oil is seldom at just 60° F. when you test it. Simple enough, but always make sure of the following essentials:

1. The official A. P. I. Scale (Shown in Figure 1 without hand written graduations). This is simply the old Tagliabue scale — standard since oil-testing began

2. Use a TAG Standard A. P. I. Combined Hydrometer (Fig. 2). It embodies an accurate thermometer, and promotes confidence and precision.

3. Avoid error by referring to the Standard Correction Tables in the TAG Oil-Testing Manual—the official authority.

The next brief discussion will be on the Color: In this space March 24

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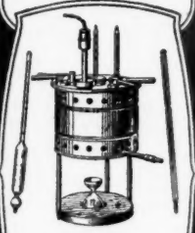

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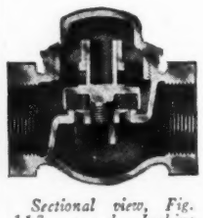
Fig. 152 Screwed, Jenkins Standard Iron Body Angle Check Valve.



Sectional view, Fig. 117 screwed, Jenkins Standard Bronze Horizontal Check Valve.

Fig. 352 Screwed, Jenkins Standard Bronze Swing Check Valve.

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Install Jenkins Check Valves; their action is prompt and reliable.
The contact at the seat is leakproof, each valve being fitted with a Jenkins Renewable Disc. In addition to insuring perfect contact, a Jenkins Rubber Composition Disc takes up the wear of frequent opening and closing.
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December 322 plants reported. They were operated at 79 per cent of capacity.

Concerning the output of heavier products, the bureau's summary says:

"Production of kerosene fell off somewhat but stocks were again reduced as domestic consumption continued heavy.

"Stocks of gas and fuel oils were once more drawn on and fell below the billion gallon mark, to 977,178,000 gallons. Production of this commodity fell off as a direct result of decreased runs to stills.

"The production of lubricants showed little change but stocks continued to soar as exports fell off."

Exports of gasoline in January established a new high record. Crude oil and kerosene exports were larger in January than in December but gas and fuel oils, lubricants and wax exports were lower.

Table No. 11—Exports of Crude and Refined Oils During January

		January		7 Months Ended January	
		1925	1926	1925	1926
Crude Oil	Gallons	47,610,609	49,697,111	390,496,351	322,554,199
	Value	$ 1,708,117	2,366,394	13,820,584	14,784,358
Gasoline, naphtha and other light ends	Gallons	91,342,466	140,131,674	683,084,979	800,731,842
	Value	$12,562,641	20,527,969	91,558,950	121,857,485
Kerosene	Gallons	73,592,610	77,501,850	551,189,383	547,967,543
	Value	$ 7,015,569	7,354,382	51,586,054	51,190,610
Gas and Fuel	Gallons	97,104,280	136,750,287	843,372,126	814,834,463
	Value	$ 3,607,675	4,312,619	29,960,994	27,659,265
Lubricating Oils	Gallons	39,380,710	29,835,092	206,139,168	222,243,893
	Value	$ 8,086,000	6,794,355	46,148,671	51,544,348
Other refined petroleum products	Gallons	107,677	578,318	2,398,523	4,260,228
	Value	$ 24,064	159,739	300,832	529,961
Paraffin wax	Pounds	31,928,829	29,050,591	209,252,599	207,128,666
	Value	$ 1,691,625	1,646,546	11,011,251	11,626,108

Tied Down, Uses Telephone To Increase Business

CLEVELAND, March 8

WHEN Jack Marsh—John Lee Marsh he was christened—manager of the Vahey Oil Co. at Youngstown, O., was just out of business school and working for a roofing concern in Cincinnati 19 years ago he reasoned that the best way to succeed was to do just a little more than was expected of him. It was a good policy, but didn't get him very far with his employers then, so he decided to seek new fields.

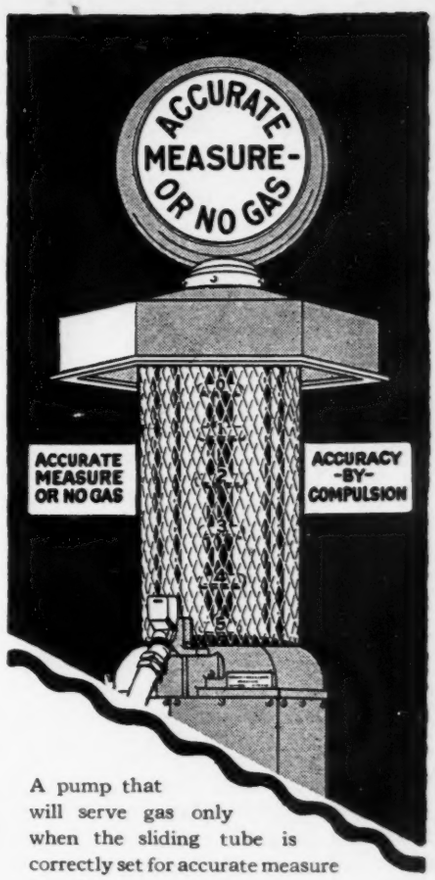
The job that appealed most was one with the Indian Refining Co. at its plant at Georgetown, Ky. He remained there a year checking shipments, writing invoices and other clerical tasks and in 1908 was transferred to the Indian's general offices in Cincinnati. When these offices were moved to New York in 1911, Jack Marsh was taken along and he gained favor not by just doing his job well but by keeping well ahead of his job. Besides the work laid out for him he relieved superior officers of part of their routine work.

J. L. Marsh

When he decided in 1912 to hunt new fields again when a change was made in the Indian's offices, an officer whom he had known only by sight called him in and wrote a letter of introduction to the officer's brother, the vice-president of the New York Telephone Co. The letter was flattering but Jack decided to stay in the oil business. Instead of going to the telephone company he went with The Texas Co. and was sent to that company's distributing plant at Youngstown.

He ran the office but had nothing to do with the plant or sales. His work took only half his time but, instead of reading dime novels or something equally entertaining, he set about to work up the business of the Youngstown branch. He could not leave the office so his endeavors had to be done by telephone. He got a list of every automobile owner in Youngstown. After he had completed his regular work each day he called automobile owners and told them of the merits of The Texas Co.'s products. He began this in April when the company's gasoline distribution in Youngstown amounted to only 6,000 gallons. His talks must have been convincing because, when the company's sales books were totaled for the following August, the volume of gasoline handled that month aggregated 90,000

(Continued on Page 88)



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"Compulsory-Accurate"

The Milwaukee Visible is the only pump that will not serve a drop of gas until set for accurate measure.

Write for plan that has increased gallonage up to 300%.

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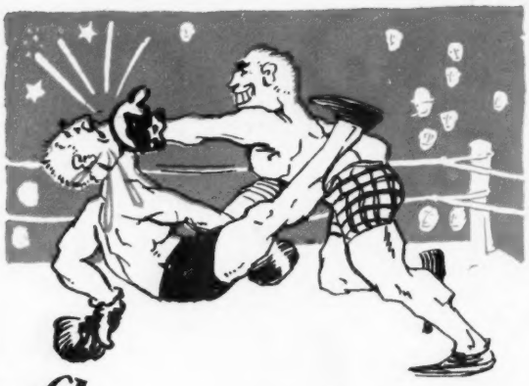

When delivery COUNTS MOST!

When delivery counts most you may usually look for *reserve power* to provide it.

It is *reserve power* that enables a fighter, after a grueling battle, to deliver the final blow that spells victory; that gives a wrestler the ability, when it seems as if both contestants must drop from exhaustion, to deliver that one last spurt that pinions the other to the floor; that explains why one horse running neck and neck with the crowd finds it possible to break away at the finish and cross the line a winner.

It is *reserve power*, too, that makes it possible for one oil marketer to furnish a particular grade of oil on a certain specified date after others have failed.

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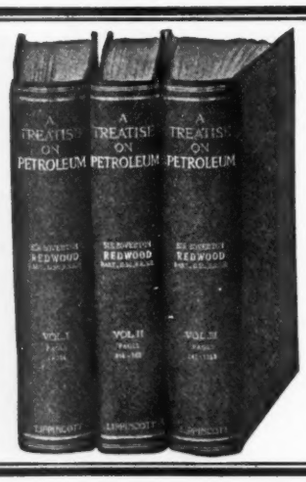

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Crystal Takes Over Caddo Central Properties

Staff Special

SHREVEPORT, March 8.—Effective Feb. 27 the Crystal Oil Refining Corp. took over the business and properties of the Caddo Central Oil & Refining Co. Receivers F. W. Garnjost and Ben Johnson were discharged by order of the federal court and the receivership was dissolved.

The Crystal Oil Refining Corp. was organized by bondholders of Caddo Central who bought in the properties at a receivers' sale on Jan. 9. The new company will carry on the business without interruption.

Mr. Garnjost was made vice president and general manager of the new company, the position he occupied with the Caddo Central before being made receiver. George L. Estabrook of G. W. Clark & Co., Philadelphia bankers, was made president, W. L. Lamont, also of Philadelphia, was selected as secretary and treasurer with A. J. Ahlum of Shreveport as assistant secretary.

Directors of the company include G. W. and S. C. Clark, Mr. Estabrook, R. L. Stringfellow and H. A. McCarthy.

Calendar Gives Meeting Dates

MARION, O., March 8.—A calendar which lists at the top dates and places of the metings of the North Central Ohio Petroleum Club that will be held throughout this year, has been published by that association to prevent the jobber from forgetting these dates.

Meetings of the club are scheduled for the second Tuesday of each month. Besides the state meetings in February, June and October, dates and places of coming district meetings are: March 9, Mansfield; April 13, Kenton; May 11, Mt. Gilead; July 13, Galion; Aug. 10, Lima; Sept. 14, Upper Sandusky; Nov. 9 Marion; and Dec. 14, Findlay.

Copies of the calendar have been mailed out from the office secretary at Marion.

Takes New Position

Robert E. Connell, formerly advertising manager of the Gulf Publishing Co., Houston, Tex., resigned that position on Feb. 24 to become sales manager for General Machine Works, Houston, on March 1.

The name of the General company has been changed to The Staytite Co., and its line of tank equipment will bear the trade-mark "Staytite."

TULSA, OKLA., March. 6.—A. T. Wood, sales manager for Chestnut & Smith, returned this week from his old home town in Indiana where he was called because of illness of his aged mother. Although somewhat better when he left, his mother, Mr. Wood says, due to her advanced age, has little hope for recovery.

Built a "Family" Rather Than a Business

By J. C. Chatfield
N. P. N. Staff Writer

E. B. REESER, recently made president of the Barnsdall Oil Corp., following the consolidation of the Waite Phillips Co. with that organization, is still "Ed" Reeser to his men.

He has been "Ed" during the 22 years he has been with the Barnsdall interests and that hasn't been changed since he was made chief of the many interests combined into one $52,000,000 corporation. Barnsdall men still drop into the chief's office for an informal chat on their problems and he drifts into their offices in the same friendly fashion.

During the entire period he has been with the Barnsdall companies, Mr. Reeser has served in an executive capacity. His apprenticeship was served with the Standard Oil Co. and the Mountain States Gas Co., a Standard subsidiary, beginning back in 1891. He started as office boy and did a bit of everything around Sistersville, W. Va., and went into business for himself as an oil producer about the beginning of the present century.

As an oil producer in the firm of Sherwood and Reeser some good properties were developed in West Virginia and a copper mine in Arizona acquired. Mr. Reeser discovered the mine was worth extended development and, lacking finances, he set out to sell it to T. N. Barnsdall, who always was noted for the diversity of his interests. Mr. Barnsdall bought the properties in 1904 on the stipulation that Mr. Reeser stay on the job as manager.

From that time on Mr. Reeser's job has been getting bigger all the time. Every year or so he was made manager of one or more Barnsdall companies. For example, in 1909 he was put in charge of the Moncton Tramway, Electric and Gas Co. in New Brunswick, Canada. He had experience in other public utility work such as the Pittsburgh Oil & Gas Co. and the Texas Gas Co. and East Texas Gas Co.

Management of more and more of the companies was placed on the shoulders of Mr. Reeser and after the death of Mr. Barnsdall, when the Barnsdall Corp. was formed, he was made vice-president and general manager of all the petroleum subsidiaries.

Selection of the Barnsdall Corp. by Blair & Co. as the company to acquire for consolidation with the Waite Phillips Co., purchased a number of months before, is looked on as a tribute to the executive ability of Mr. Reeser by his friends. They will tell you that the bankers were sold on Mr. Reeser and the organization he has developed and that was the main reason they picked out the Barnsdall Corp.

As an executive Mr. Reeser has always been a leader of his men rather than a driver. This has been one of his greatest assets in building up a company which is considered by its employees as "a big family," and which lives up to that name by having an extremely low labor turnover.

The Barnsdall companies were among the first oil companies to provide group insurances for employees. They went even farther than most companies and began carrying insurance on the wives of Barnsdall men, so that death expenses might be borne readily. Recreation centers, educational aids and other welfare work for employees and a liberal policy of bonuses have aided in building a "family."

Other Barnsdall executives credit Mr. Reeser with being a keen analist of conditions, as well as being a picker of good men. They say that his mind is always eager for facts which he sifts, marshalls in their proper order and uses as the basis for his decisions.

This afternoon when the writer dropped into Mr. Reeser's office, he found him studying an article on the Amarillo oil field in the Feb. 24 issue of National Petroleum News. While he declared himself interested in the facts presented there, he was eager for more and suggested a second article on the economic side of the production of oil with such a high content of paraffin wax from a lime formation.

Business has so engrossed the life of Mr. Reeser that he has not found time for a great deal of recreation. Fishing, hunting and golf hold no particular lure for him and his vacations have been few and far between.

When he lived in the east Mr. Reeser made his home at Stamford, Conn., 50 minutes from New York. There he had a beautiful six-acre place on the Sound where he took much pleasure in his gardens. But with an hour to go to work and an hour to return his business hours of 9 to 5 o'clock left him few hours of daylight at home. He likes it very much in Tulsa where his car can easily carry him home from the office in ten minutes.

Mr. Reeser gets much enjoyment from contact with persons around him. He likes an evening of bridge better than any other entertainment. If he has any hobby, that is it. It can scarcely be golf since he has played only four games in the past year.

E. B. Reeser, president of Barnsdall Oil Corp., is off for the field.

Encourages Local Trade

MARIETTA, O.—W. H. Clark recently opened another new service station here. Mr. Clark owns and supplies 38 filling stations and has 50,000 gallons gasoline storage capacity.

To encourage local motorists to patronize home industries, Mr. Clark has placed a sign in front of his stations which states, "A dollar spent here continues to serve and build Marietta."

Vacuum to Retire All Bonds

CLEVELAND, March 6.—Vacuum Oil Co. has elected to retire on April 1 all outstanding 15-year 7 per cent bonds due April 1, 1936. The amount is $16,100,000 and the redemption price will be 104 and interest. This will free the Vacuum of funded debt.

TULSA, March 6.—Cushing Refining & Gasoline Co. is increasing the size of its gasoline plant in the Blackwell field to take care of additional gas now available. The plant has been producing around 2000 gallons per day and will be increased to a production of about 8000 gallons per day.

Marland in Best Year Nets $7.81 a Share on All Stock Issued

Staff Special

CLEVELAND, March 8

LAST year was the first the Marland Oil Co. realized fully the benefits from large expenditures of previous years when the company's subsidiaries were acquiring and developing large petroleum reserves and expanding its refining and marketing facilities, President E. W. Marland has reported to stockholders.

The company netted after all charges and the setting aside of $875,000 for federal income taxes, $14,799,068, equal to $7.81 on the 1,895,103.5 no par shares outstanding at the end of 1925. Net earnings were $8.38 a share on the average number of shares outstanding during the year.

In 1924 the company netted only $354,316 after reserves, equal to 23 cents a share on the 1,549,961.3 shares outstanding at the end of that year. In 1923 net earnings were $1.52 a year. The 1925 earnings were more than three times the best previous year in the company's history, 1922.

Production Greatly Increased

Marland's subsidiaries' production of crude was more than 3,700,000 barrels more than in 1924 and sales of crude and refined oils were almost double the 1924 sales. Mr. Marland submitted the tables below comparing operations in the last three years.

Concerning the 1925 operations, Mr. Marland said in part:

"Throughout 1925 supply and demand for petroleum were more nearly on balance than has been the case for many years. The situation was favorable for companies having large production and established markets.

"Marland Oil Co. marketed in excess of 25,000,000 barrels of petroleum and products during the year against contracts made in 1924, out of oil produced from its own wells and oil purchased by subsidiaries and affiliated companies.

"The facilities of the company for handling its business in 1926, have increased by the expenditure of $14,982,704 on additions to property in 1925. This expenditure is reflected on your balance sheet by net increase in property account of only $562,472. The company increased its undeveloped acreage holdings from 665,839 acres to 1,032,595 acres. It increased its proven acreage and the number of producing wells and very largely increased its proven reserves of unmined oil.

Pipe Lines Extended

"The oil pipe line system was extended by the addition of 48 miles of trunk lines and extension of gathering lines. The refinery is being increased to a capacity of 25,000 barrels of crude oil daily and additional complete cracking units are being added. The retail marketing facilities were increased by the addition of a large number of stations.

"Contracts were made during 1925 for delivery of petroleum and products during 1926 in an amount in excess of 30,000,000 barrels.

"The large capital expenditures made by the company during the past year in every department of its business were designed to increase its volume, improve its efficiency, reduce its operating costs and increase its earnings.

"The ability of the company to maintain its position in the industry in future years should be measured by its ability to maintain unmined reserves behind its plant facilities. No independent appraisal of these reserves has been made since July, 1920, but the company's appraisal engineers show the amount of proven reserves to be constantly increasing and their present value to be at least twice their book value."

The company this year issued a more detailed report of its condition. All its property including leaseholds, real estate, refinery, natural gasoline plants and marketing stations is carried on the books at $57,818,594. This was after deduction of depreciation and depletion reserves which total more than $30,000,000.

Its investments in subsidiaries are carried at cost. Value of its holdings in Comar Oil Co. is carried at $2,776,386 although it received $7,900,000 in dividends from that company alone last year. In 1924 it received $3,750,000 from Comar and in 1923 $5,000,000.

The ratio of current assets to current liabilities showed a small decline but Marland wiped out its entire funded debt totaling $20,521,000. Part of this was made possible through the sale of 335,000 shares of capital stock to J. P. Morgan & Co. at $40 a share but the remainder of the money, approximately $6,000,000, came from earnings.

The consolidated balance sheets of Marland and subsidiaries as of Dec. 31, 1925 and 1924, follow:

ASSETS

	1925	1924
Property Account—Cost		
*Real estate, bldgs.	$ 1,797,120	$ 1,702,873
*Refinery, gasoline plants, pipe lines, marketing plant	20,653,173	18,268,052
*Leases, wells, equip.	18,659,125	15,273,949
Net appreciation leaseholds	10,861,949	18,820,529
*Net discovery values	5,847,227	3,190,719
Total net property acct.	$57,818,594	$57,256,122
Investments, Advances—Cost		
Marland of Mexico	3,693,762	3,693,762
Consolidated of Mex.	2,847,520	2,847,520
Comar Oil Co.	2,776,386	2,776,386
Reagan Co. Purchas.	1,000,500	100,500
Miscellaneous	2,121,452	1,782,188
Unadjusted debits	1,432,958	2,038,622
Cash	3,999,108	3,444,783
U. S. treasury notes	1,000,000	.....
Bills receivable	374,298	239,902
Accounts receivable	5,214,325	5,855,528
Crude inventory	4,373,817	8,491,165
Refined inventory	3,970,655	3,604,932
Materials, supplies	1,764,671	1,569,818
Interest receivable	24,991	9,222
Miscellaneous current assets	189,390	159,497
Total	$92,802,429	$93,869,943

*After depreciation or depletion.

LIABILITIES

Capital and Surplus	†$88,897,186	‡$70,526,236
2-yr. 5% notes	.....	20,000,000
8% equipment notes	.....	521,000
Minority interests	120,306	178,213
U. S. tax reserve	875,000	.....
Accounts payable	2,634,886	2,344,292
Accrued interest, taxes, insurance	275,051	300,203
Total	$92,802,429	$93,869,943

†Represented by 1,895, 103.5 no par shares.
‡Represented by 1,549, 961.3 no par shares.

Operations for Three Years

	1925	1924	1923
Net production crude oil (Bbls.)	12,259,664	8,500,208	6,744,918
Pipe line runs crude oil (Bbls.)	15,504,855	14,816,910	13,844,681
Crude oil runs to refinery (Bbls.)	5,958,971	4,210,123	3,158,199
Inventory of crude oil Dec. 31 (Bbls.)	2,672,696	5,874,183	2,273,673
Inventory of refined products Dec. 31 (Bbls.)	1,836,205	1,446,476	890,586
Sales of crude oil and refined products (Bbls.)	21,568,790	11,907,884	10,721,185
Crude oil sales by Reagan County Purchasing Co. (51% owned) (Bbls.)	4,745,136	.....	.....
Casinghead gasoline production (Gals.)	20,782,000	12,961,000	8,533,000
Natural gas sales (M. cu. ft.)	11,783,693	7,392,000	2,417,000
Oil leases owned (acres)	1,052,345	680,839	650,248
Average daily crude oil production, month of Dec. (Bbls.)	32,145	29,301	15,051

Consolidated income accounts of Marland Oil Co. and subsidiaries

	1925	1924	1923	1922	1921
Gross income	$64,718,281	$33,205,451	$37,937,409	$17,511,343	$ 8,883,608
Operating expenses, etc.	48,607,235	27,952,940	31,039,270	9,643,359	5,997,085
Operating income	$16,111,046	$ 5,252,551	$ 6,898,139	$ 7,867,984	$ 2,886,523
Other income	8,512,683	4,005,506	139,643	224,140	119,036
Total income	$24,623,729	$ 9,258,017	$ 7,037,782	$ 8,092,124	$ 3,005,559
Interest, amortization	974,283	1,148,574	1,418,583	896,883	618,434
Discounts, U. S. taxes, etc.	1,435,922	2,245,067	.....	.....	828,701
Depreciation, depletion, etc.	7,414,456	5,510,071	3,896,199	3,065,611	.....
Net income	$14,799,068	$ 354,306	$ 1,723,000	$ 4,129,630	$ 1,563,424

HAZELTON, PA.—The Pioneer Distributing Co., distributor for Tide Water Oil Sales Corp. in this territory, has extended its territory by taking over Lehigh county. J. A. Bayless is general manager.

BEAVER FALLS, PA.—Silk Service, Inc., has erected a house on its Monaca, Pa. property for its manager, Edward Garvin.

McDonald Double Swing Joint

Famous For Service

You'll find McDonald Swing Joints in use all over the world—because they give such exceptional service.

This supremacy is due to their extremely sturdy construction, tightness and durability. They remain in service 7 and 8 years without repacking. Packed with McDonald Specially Prepared Packing, they resist the action of gasoline and kerosene. They give free motion and do not leak.

All parts are strong and heavy. Designed so they can be repacked quickly and easily. Made in single and double styles in sizes from 1 to 12 inches.

Duplex Tank Vent. Patented. Listed by Underwriters.

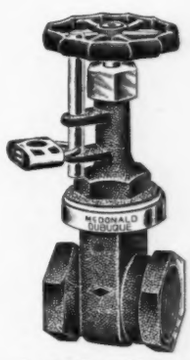
"The Home of the Swing Joint"

A. Y. McDONALD MFG. CO.

DUBUQUE, IOWA

OMAHA MINNEAPOLIS DES MOINES

There's a McDONALD Distributor Near You



Lock Gate Valve. Patented. Flanged or Screw Types.

McDONALD

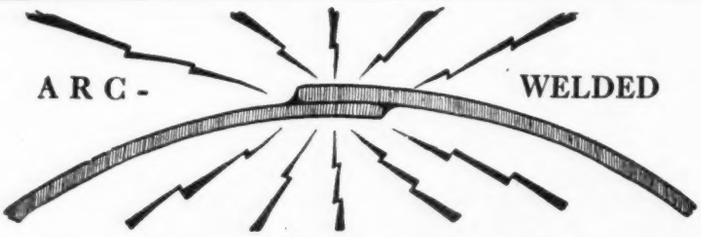
Sell Keen & Woolf Lubricating Oils

Because

Winter and summer, spring and fall, they give complete lubrication.

KEEN & WOOLF OIL CO.

Refiners for Jobbers Houston, Texas



STORAGE TANKS

IN STOCK AND SPECIAL SIZES

Highest Quality—Prompt Delivery—Low Prices

EMERSON-SCHEURING TANK CO., INC.

INDIANAPOLIS, - U. S. A.

(Continued from Page 83)

—a fifteenfold increase in only four months.

Up to that time The Texas Co. had sold only one drum of motor oil in a year in Youngstown. In another year during which Marsh was a persistent telephone user the sales of motor oils averaged a carload a month.

Marsh was transferred to The Texas Co.'s New York office in 1914 but was back in Youngstown a year later as manager of the plant. He remained in that job three years when he joined the Vahey Oil Co., then planning a program of expansion because of the rapidly increasing number of automobiles in the city, as manager.

The Vahey's business has been expanded from one of limited proportions to one having three bulk stations, a chain of service stations and dealers.

Marsh is a strong booster. He is active in association work and one of the leaders in the Ohio Petroleum Marketers' Association of which he is vice-president and a director. He is active in all sorts of charitable and home town boosting efforts for several reasons, the least of which is not the fact, he is frank to say, that it brings prestige to the Vahey company.

Features Own Brand of Motor Oils

SPARTANSBURG, S. C., March 4.—Special advertising and sales methods were adopted by the Blackburn Oil Co., with headquarters here, as a means of introducing to the motoring public the fact the company was starting to market lubricating oils under its own brand name. Its trade name is Diamond B, and its trademark a diamond with a B inside.

The company used double page space in the local papers to tell the public the efforts the company had made to insure that the motor oils it was introducing under its own brand name were quality products. It told of the study and consideration R. H. Blackburn had given to the problem, and how he had secured the services of the well known lubrication engineer, W. F. Parish, of New York, to help select suitable grades of oils.

Sales talks on the superior qualities of the oil, as given in this advertising, did not include technical flash and fire and viscosity tests, but were limited to talking of the performance of the oil in use, the saving on the motor and added life to the car given through proper lubrication with the right oils.

In other publicity matter the Blackburn company talked of its laboratory and the care used there to see that all oils the company handled were uniform.

The company also features in its advertising for its oil the fact "Every dollar spent for Diamond B Oil stays in Spartansburg—it is a Spartansburg product—your money stays at home to help support our churches, schools, and other civic organizations."

HAVOLINE FRANCHISE SUCCESS No. 7

Advertisement of Indian Refining Co., Inc.

What Does the Public Want? General Found It Willing to Learn

Rounded out its line with Havoline and got strangle hold on the local market for quality oil —sales rights protected by long term agreement

"RUN your business to satisfy your customers—not yourself," is J. Gregory Johnston's motto. A plain, everyday statement which finds no trace of argument! Yet, carry this motto out to its logical conclusion, and you've fathomed the secret of one of the outstanding merchandising successes of the South—Johnston's two-and-a-quarter-year-old General Oil Corporation of Birmingham, Alabama.

For, like many another prospering "local," General Oil has wormed its way upward to success with the help of two dominating factors. First, a remarkably high-quality local brand of gas and oil. Second, tie-up with an oil of national reputation. And it was this second feature which, according to Johnston, "broke the camel's back" of sales resistance in Birmingham, and enabled him and his associates to gain firm foot-holds in an unusually difficult territory.

Big Business—and Growing

Take a look at General Oil's business today. You don't have to go far in Birmingham before a neat looking Go-Zip Station invites you to fill up your gas tank and crank case. There are fifty of these attractive stations in the city and its suburbs. Seven tank trucks and two stake trucks keep the supply up to the demand. At present General Oil is selling more than 200,000 gallons of gasoline per month—and each month its gallonage mounts higher.

All this from a start at scratch in November, 1923! President Johnston, Vice-President Blinn and Secretary-Treasurer Umphrey have worked up their business entirely on three products: Go-Zip gas, Speedoil and Havoline—the Power Oil. Go-Zip is a home product of Birmingham, a benzol blend motor fuel, and is highly popular as an anti-knock, anti-carbon, high-mileage gas. Speedoil is a local brand which commands a large sale—it is now hitting the upper side of 16,000 gallons a month.

What need for another oil? Just ask Johnston—who believes he has a very good reason for the policy he backs.

"I won't attempt to tell anyone how to run his business," he will tell you, "but I am only too glad to open my books and

HAVOLINE
– the power oil
INDIAN REFINING COMPANY, Incorporated

show you exactly what we have done and how we have done it. From the beginning we went on the principle that a well-rounded line offered the best marketing possibilities. The more people we were equipped to satisfy, the better chance we had to make a solid customer out of each prospect that came along.

"A good many oil men have asked me how we got such complete coverage in Birmingham—for that's been considered one of the hardest local markets in the country to break into. The answer is simple. More people than you realize, in this and every other community, want oils and greases that have national distribution and national acceptance. We saw what a good sized slice of the local trade those people represented. We did not want to be blocked in our approach to this slice. So we went after a top-quality national oil to fill out our line.

"And in the Havoline Franchise we found a happy solution to our problem. Havoline—known all through Birmingham as 'the power oil!' That was an oil that could win us trade. On top of that, the exclusive territorial rights which Indian offered, assured us of holding *for ourselves* all the trade we won."

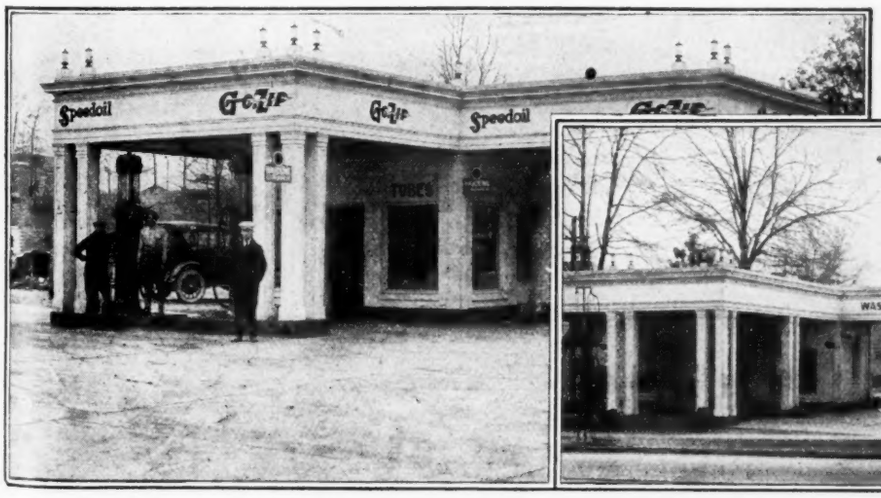
Sales Shoot Ahead

Result? Havoline sales have jumped forward so fast that arrangements have been made to handle four grades of it in 8,000 gallon tank car lots. Purchases have been made in 20,000 gallon lots at a time.

"With Indian's constant flow of merchandising and advertising helps laid at our door," asserts Johnston, "Havoline couldn't help going over big in Birmingham.

"And why aren't we in the best position to judge the success of the so-called Havoline Franchise Policy? For while this policy was only announced and made general less than a year ago, it was with us that Indian made its first experiment in this method of merchandising and we've had more than two years' experience with it. So we know when we say *that it works*. We're looking forward to a rosy future with few thorns. Our franchise assures us of cooperation and protection—and that is, all things considered, an ideal system for local operation on a national basis."

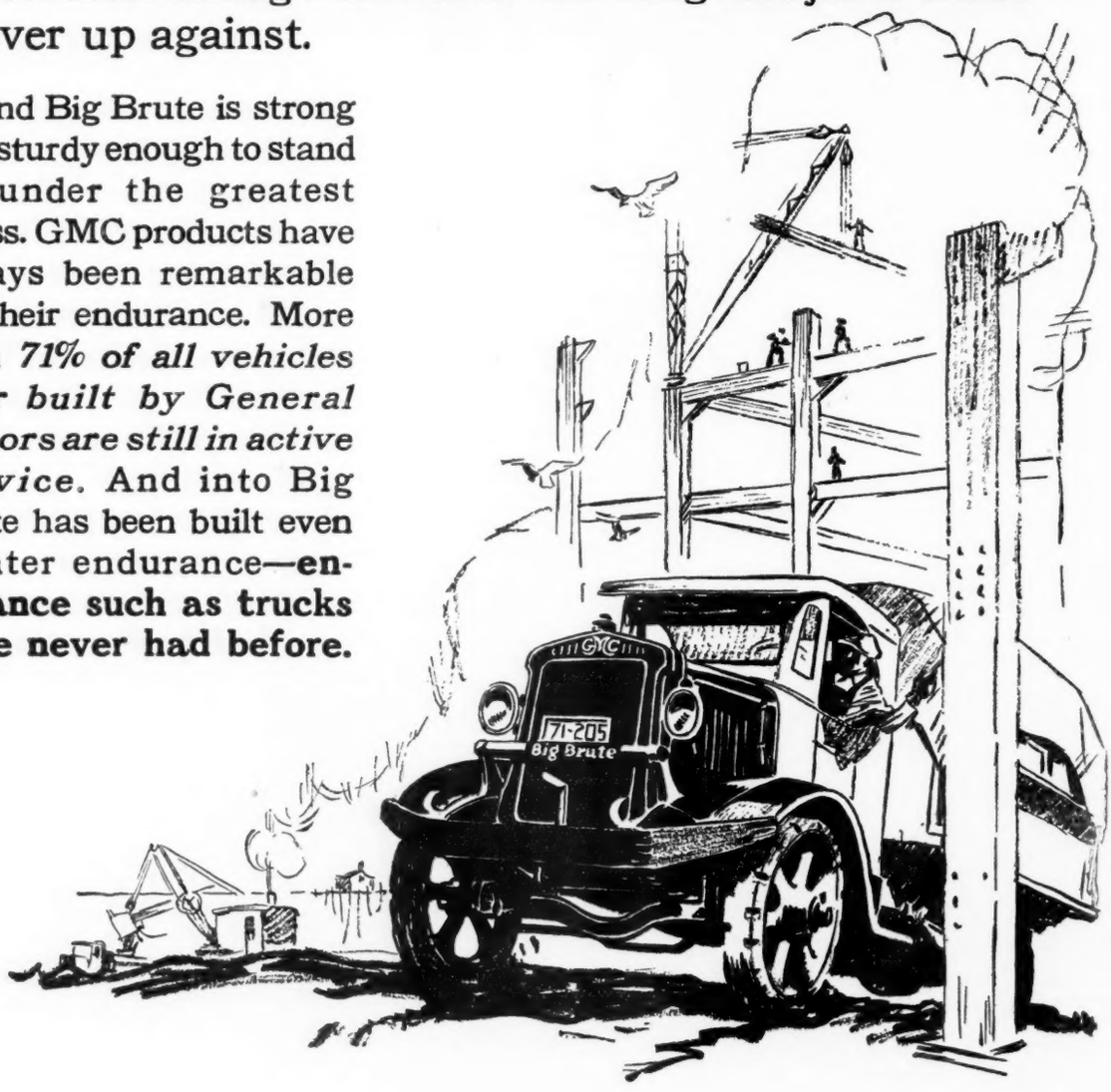
Outside Indiana, Illinois, Ohio and parts of Michigan and Kentucky (except territories already allotted), the Havoline franchise and Havoline support are open to local oil operators on a basis exactly like General's. Other things being equal, inquiries are given preference according to time of receipt. Wire or write A. H. White, Indian Refining Co., Inc., Lawrenceville, Ill.



Greater POWER and ENDURANCE in GMC Big Brute

WATCH Big Brute pull a heavy load up a steep hill—watch it plow its way through "heavy going". **Then you will realize its** *greater power.* You can load it to full capacity—*and more*—knowing it is powerful enough to master the toughest job a truck is ever up against.

And Big Brute is strong and sturdy enough to stand up under the greatest stress. GMC products have always been remarkable for their endurance. More than *71% of all vehicles ever built by General Motors are still in active service.* And into Big Brute has been built even greater endurance—**endurance such as trucks have never had before.**



Contributing Factors To Corrosion With Special Reference To Sulphur

By Dr. C. K. Francis
Petroleum Technologist

Read before W. P. R. A. Meeting, Fort Worth, March 3.

THE element sulphur, while absolutely essential to the needs of our daily life, when in its proper place, often gets into the wrong company and then it creates so much havoc that it becomes worse than an annoyance.

The presence of sulphur in petroleum will no doubt, have considerable bearing on the final decision as to whether the oil was formed from plant or animal substances. Plants usually contain but little sulphur. Those oils containing large quantities of sulphur may have been formed from large animals or a large number of animals. No matter how it got there, that cannot be remedied today, but it is in the oil, so methods must be studied and devised to control and to get rid of it.

There is one phase of corrosion which must be mentioned before considering the main topic of this paper. That is the quality of the material used in the petroleum industry for handling liquids, vapors and gases. Some metals are absolutely unsuitable and should never be considered for permanent installations. This is not because of possible sulphur corrosion but for many other reasons, the chief of which are their characteristic properties.

Zinc, copper, aluminum and lead are easily attacked by numerous substances. The water associated with petroleum often contains salts and organic acids which are detrimental to these metals. Combinations of unlike metals, especially when making contact, are bad because of possible decomposition through electrolytic action. If, for example, a piece of zinc or an alloy, should be placed close to iron in a water solution, or maybe in oil which contains particles of water, and then connected in some manner as by a piece of pipe, a current may be produced. Such a condition brings about a double result; a dangerous electric current as a fire hazard and the corrosion of the metal.

Inferior or impure iron and steel may be likewise classified, for pure iron is known to resist corrosion to a remarkable degree. There are many examples of this in specimens of hand forged articles of iron which were made in the early days of civilization. The iron column of Delhi was erected over 3000 years ago and it stands today practically without damage after its long exposure to the atmosphere.

Metal Should Be Considered

It will often escape the consideration of the purchaser of pipe, tankage and other refinery equiment, that the chemical composition of the metal deserves more than ordinary attention. A purity such as that of the wrought iron produced so many centuries ago in India, cannot be expected under modern conditions. However, it is well to be on guard against the presence of those objectionable substances that may be detected by proper chemical analysis. Iron made from low grade ore or under improper conditions and with inferior fluxing materials, may have some place in the industry as window weights, but certainly cannot serve for vapor lines, condenser coils, run down lines and other places where a high quality iron is needed.

These points may be summarized by saying that there are numerous conditions and factors, including the crude oil, water, metals and their combinations, electrolysis and the chemical composition of the iron, which may be contributing causes for corrosion.

The first petroleum to be marketed did not contain sufficient sulphur to cause damage or to present a serious refinery problem. However, when the northern Ohio oil was discovered it brought a sulphur trouble which has been with the industry ever since. There can be no doubt that the development would have been long delayed had the Ohio oil been brought in ahead of the Drake well. The report by Professor Silliman drew attention to the commercial possibilities of the Pennsylvania oil. While his chemical investigation was largely responsible for the establishment of a great industry, a similar study of the high sulphur oil from Ohio could not have received so favorable an endorsement.

The Ohio oil contained so much sulphur and the odor was so bad that for a long time there was no market for it at any price. The corrosive action of the sulphur on the equipment and the physical discomfort experienced by the workers were indeed serious obstacles to overcome. The control of sulphur in that oil constitutes one of the remarkable achievements of modern industrial research. It was found that the larger part of the sulphur would combine with copper. So when the copper under proper conditions was placed in the still, the oil was purified to such an extent that it could be refined. Through this means the oil found a market.

It is our good fortune that the Mid-Continent oils do not as a rule, contain large quantities of sulphur. The purification process in the refinery is neither seriously complicated nor very expensive. Control or partial removal of the sulphur from the crude oil has a definite influence on corrosion of the apparatus and the quality of the products to be marketed. Sulphur is present, however, in sufficient quantity to do such extensive damage to the refinery equipment as to cause considerable loss and annoyance.

An analysis of the Cushing crude, while one of the best grades, will serve to illustrate how the sulphur is distributed through the various fractions obtained from the original oil.

Distribution of Sulphur in Products from Cushing Petroleum

The original oil was 37 gravity and contained 0.350 per cent sulphur. All figures in the table are in terms of per cent.

Product	Quantity Obtained	Sulphur Content	Sulphur as Part in Crude	Per Cent of Total Sulphur in Crude
Gasoline	31.77	0.02	0.0067	1.91
Kerosene	18.26	0.05	0.0086	2.45
Gas Oil	5.74	0.10	0.0060	1.71
Lubricating distillate	28.19	0.77	0.0970	27.72
Fuel Oil	15.21	0.76	0.1156	33.03
Gas and Loss	0.83	14.04	0.1161	33.18
	100.00		0.3500	100.00

The separation was made according to common practice, with the use of steam and towers. The products mentioned were obtained by one run and were not treated or purified in any manner. The sulphur is shown to increae in quantity as the distillation proceeds, the lowest percentage being in the gasoline or first fraction, and the highest in the last fraction and the fuel oil residue.

Contributing Necessity for Sulphur Control

The distribution ot the sulphur throughout the entire list of products indicates the necessity for its control and purification of the products by treating or other methods. While the thought in this paper may be confined to the corrosion of refinery equipment, it may be suggested that if the chief petroleum products, gasoline, kerosene, lubricating oil and fuel oil, are not sufficiently freed from sulphur serious dam-

Thomas J. Hilliard, president of the new Waverly Oil Works Co. Before the merger of the old Waverly Co. and the Pittsburgh Oil & Refining Co. Mr. Hilliard had been president of the Pittsburgh company since its formation three years ago. He now heads a business that was established 46 years ago.

age may result to motors, machinery, silverware and other material.

The first appearance of sulphur when distilling an oil of this grade is usually detected around 400° F.; that is, near the end of the gasoline fraction. Its presence here may be due to very small quantities of hydrogen sulphide in the crude or to the decomposition of closely related substances. This decomposition is caused by heat and by the action of certain acids on the sulphur compounds in the oil and in the metal.

Hydrochloric acid is one of the products obtained when calcium and magnesium chlorides are heated in the presence of water. These chlorides are often found in oil. The acid forms hydrogen sulphide when it combines with sulphur, which it is suggested, may be found here both in the oil, the metal used in the still, towers, condensers, etc.

Probably the combination of hydrochloric acid and sulphur is responsible for most of the refinery corrosion. This acid does not react on the metal at elevated temperatures but as the vapors cool and condense in the presence of wet steam or water, it becomes active. The concentrated acid is a gas easily soluble in water. The dilute acid is much more energetic in its action on metals than the pure acid. Damage to condenser equipment often follows as a result of the formation of hydrochloric acid.

Removal of all water, when the temperature in the condensers falls below 212° F., as it collects in the condensers should be practiced. That is, the water should not pass from coil to coil and to the receiving house together with the product, but should be collected in a trap as soon as condensed and then taken from the box through a direct line. Continuous flow of the acidulated water through the condensing system means unnecessary action on the metal and needless consumption of the cooling units from the condenser water.

Sulphur In Residues

The larger quantities of sulphur found in the lubricating oil and the fuel oil residue represent the compounds, such as sulphates, which are not easily broken up by heat. If the temperature is quite high, as when reducing to coke or when the oil is burned as a fuel, the sulphur may be liberated in various forms depending on local conditions. Hydrogen sulphide may be formed in the absence of air, but when enough air is present the oxides and acid of sulphur are produced.

The corrosive action of sulphur may proceed in several ways. A direct combination with the metal will produce a sulphide. The direct combination of iron and sulphur forms iron sulphide. Under some conditions this combination is often followed by contact with a dilute acid, and then extensive corrosion results in a very short time, because the iron suphide is easily acted upon by even very dilute acids. The sulphur may combine with other elements to form compounds which have corrosive properties. The sulphur oxides and the sulphur acids belong to this class.

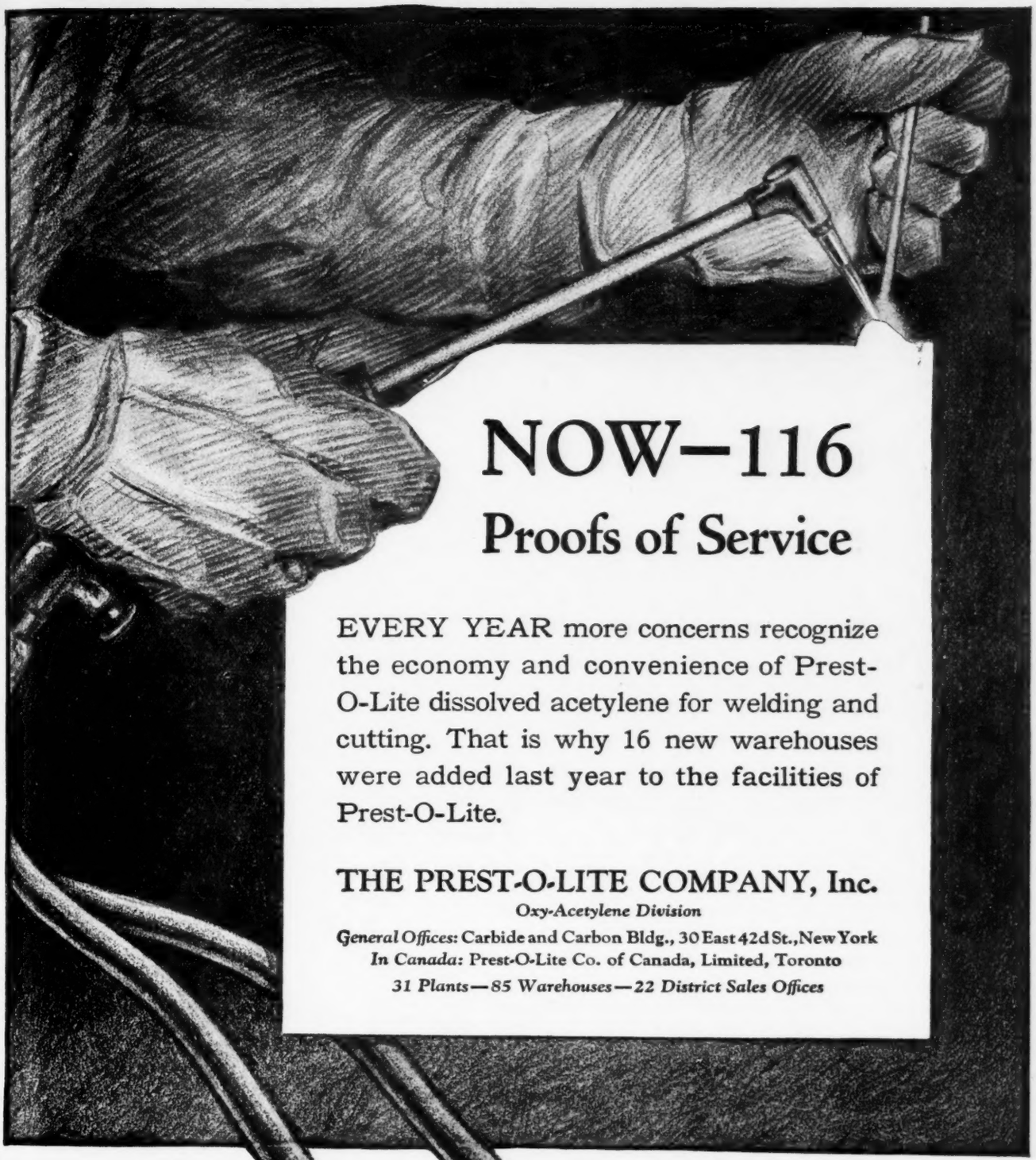
Deposits of the element sulphur are often found in parts of the refinery units. These yellow masses should always be removed. When sulphur is melted and brought into contact with hot iron, a combination sets in at an exceedingly rapid rate and the resulting sulphide renders the iron useless. Hot spots may be produced in this way.

The corrective measures, as applied to the Mid-Continent oils, are chiefly of the neutralizing type. These are in the main confined to the use of alkaline materials, such as lime, ammonia, caustic soda, soap powders and lime stone. Water will remove some sulphur from the crude when it is in the form of small quantities of hydrogen sulphide. The purification of the crude before it reaches the still, if possible, is always advisable. Passage of the oil through the alkaline solution, either by means of a tower or separator system, will in many cases be found effective and economical.

When the objectionable form of sulphur is produced during the process of distillation, it will be necessary to add the neutralizing material to the still or into the tower. Ammonia is ideal for use in the still because of its volatile properties. It will, however, form sulphates which, if permitted to accumulate, may result in hot spots on the still bottom. The other alkalies when used in the still are subject to the same objection. These alkaline materials are used in solution in water and under the conditions of ordinary still temperatures, the water of solution is evaporated; but as the temperatures are not high enough to carry off the solids, caustic soda, ammonia sulphate, sodium sulphate, etc. remain in the still. These may be removed by cleaning, which should include thorough washing and draining. If the conditions are carefully observed, together with frequent tests, the deposition of the chemical salt may be controlled, so that hot spots or secondary damage need not occur because of them.

It has been an extensive practice to control corrosion by using extra thickness of metal and to replace the parts when the walls become so thin as to be near the danger point. Numerous combinations of alloys have appeared on the market which have been invented for the purpose of retarding refinery corrosion. Many of these special metals possess real merit while some appear to have no advantage over ordinary material. A large number of corrosive resisting metals have been studied by Wilson and Bahlke and they have reported* that the high nickel-chromium stools, some special bronzes and calorized iron stand up remarkably well. Commercial bronze, brass, and low chromium steel showed high losses. The special alloys cannot be extensively used because of the expense, but they should be considered for new installations and for replacements.

*Jour. Ind. & Eng. Chem. 17; 355, 1925.



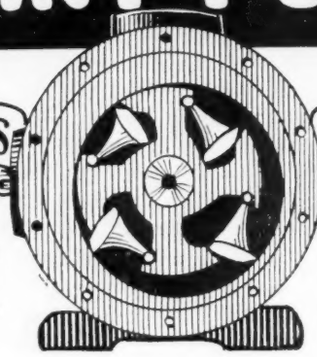
NOW—116
Proofs of Service

EVERY YEAR more concerns recognize the economy and convenience of Prest-O-Lite dissolved acetylene for welding and cutting. That is why 16 new warehouses were added last year to the facilities of Prest-O-Lite.

THE PREST-O-LITE COMPANY, Inc.
Oxy-Acetylene Division
General Offices: Carbide and Carbon Bldg., 30 East 42d St., New York
In Canada: Prest-O-Lite Co. of Canada, Limited, Toronto
31 Plants—85 Warehouses—22 District Sales Offices

Prest-O-Lite
DISSOLVED ACETYLENE

BLACKMER ROTARY PUMPS



Dominates the field in transferring oil and gasoline.

Capacities from 3 G. P. M. to 500 G. P. M. hand or power operated.

District Offices

284 Peachtree St., Atlanta, Ga.
709 Title Bldg., Baltimore, Md.
428 Old South Bldg., Boston, Mass.
52 W. Chippewa St., Buffalo, N. Y.
608 So. Dearborn St., Chicago, Ill.
1347 Book Bldg., Detroit, Mich.
408 Austin St., Houston, Texas.
4025 Boulevard Place, Indianapolis, Ind.
1505 Commerce Bldg., Kansas City, Mo.
1320 Starks Bldg., Louisville, Ky.
429 Broadway, Milwaukee, Wis.
549 Plymouth Bldg., Minneapolis, Minn.
306 Wells Fargo Bldg., New Orleans, La.
71 Murray St., New York, N. Y.
904 Real Estate Trust Bldg., Philadelphia, Pa.
711 Ferguson Bldg., Pittsburgh, Pa.
1516 Pine St., St. Louis, Mo.
693 Mission St., San Francisco, Calif.

BLACKMER ROTARY PUMP CO.
GRAND RAPIDS (FORMERLY PETOSKEY) MICH.

Cardboard Gaskets

For { *Tank Car Domes* / *Tank Car Outlets* / *Low Pressure Stills*

Any size in fractions of inches from 5 in. to 34 in.

FORNEY FIBRE CO.

100 Boyd Ave. *Jersey City, N. J.*

Newspaper Section Is Oil Co. Ad.

DETROIT, MICH., March 5.—A 10-page section of news and advertising space in the Detroit Free Press was used by the Wayco Oil Corp., with headquarters here, during the recent auto show to tell the public about itself and its products.

The first and second pages were devoted to advertisements of Shell gasoline, which the Wayco company distributes. The Shell trade-mark and its slogan, "More Power to You," appeared on this page, as well as a sketch of one of the company's stations. Other pages included advertisements of those companies whose products and equipment the Wayco company uses, such as tires, trucks, batteries, signs, electrical goods, pumps, oil burners, etc.

One full page was devoted to a history of the growth of the Wayco company, pointing out that, although it started in business less than four years ago with one service station, today it controls 68 service stations in and around Detroit, owns a plant and equipment valued at $1,000,000, employs 175 station operators and 150 other employes at the main plant. Storage space is provided by 23 15,000 gallon tanks for gasoline, and eight 10,000 gallon tanks for Valvoline oils. A fleet of 51 tank trucks and cars comprises the delivery equipment. The main plant covers 125,000 square feet.

The officers of the company are brothers, each of whom put in $2,000 to start the business. Officers are: E. F. Schlee, president; E. H. Schlee, vice president; A. G. Schlee, secretary; and D. S. Schlee, treasurer.

Pictures of 74 men who are officers of the Wayco sales and service club and supervisors of the company appeared on one of the pages. Another page included a map of Detroit showing the locations of the various Wayco service stations. A full page advertisement showing how Valvoline motor oil, made by the Valvoline Oil Co., New York, was used in the air, on land and water, was also included in this section. The Wayco is distributor of Valvoline oils. A motor boat, an automobile and an airplane in the advertisement carried out this idea. Federal Motor Truck Co. employed the back page of the section to herald the use of its trucks by the Wayco company.

Will Add Equipment

BRANTFORD, ONT., CANADA.—The Superior Oil Co., Ltd., has taken over the bulk station equipment of the Empire Oil Co., Ltd., and is planning to extend its business during the coming season. Additional equipment will be installed as required and storage for lubricating oils is now being put in.

Officers of the new company are: W. H. Wilson, president; Hamilton Goold, vice president, and L. G. Teakle, secretary and treasurer.

Unified Action Needed by Western Refiners in Freight Rate Case

By Fayette B. Dow
Washington Counsel, W.P.R.A., A.P.I. and N.P.A.

Delivered before Western Petroleum Refiners Association at Fort Worth March 2

WITH the enactment of legislation which followed the return of railroads to private management after the World War the federal government entered upon a new period of regulation which differs in many important respects from those which preceded it. The first period, from 1887 to 1906, was largely concerned with the repression of rebates and unlawful discriminations.

From 1906 to the war period regulation was centered in the reasonableness of the rates from the standpoint of the shipper. Although the law in principle assured the carriers a fair return on the value of the property which they devoted to the public use, that value was not known and the Interstate Commerce Commission functioned in fact to protect the public from unjust exactions for the service of transportation. The World War brought its now well known consequences; government control, inflated costs and higher rates.

Following the return of the railroads to private management, Congress enacted the transportation act which inaugurated the third major period in federal regulation. It is perhaps too early to appraise in final terms the wisdom of that act but it lays down a broad National policy from which, as security values clearly show, the railroads have greatly benefited. They surrendered an important part of private management—as is evidenced by supervision of security issues, of the right to build extensions or to abandon unprofitable lines, of control over service—and they secured a mandate to the commision to initiate or adjust rates for the railroads as a whole or by groups which will assure, as nearly as may be, a fair return upon the aggregate value of the property devoted to the public use in transportation.

Thus the valuation act, previously adopted, became an integral part of the new national policy. With this mandate before it the commission's major function was definitely changed. It no longer exists primarily to protect the shipping public from unreasonable rates. It is in substance charged with the responsibility of maintaining the financial integrity of a national system of railroads. Cases attacking particular rates have continued but in every such case the question: "What would be the effect of a reduction upon the carriers' revenues?" confronts the parties complainant with a force far greater than it ever exerted prior to the transportation act.

The tentative results of the commission's valuation work do not indicate that the final railroad values will afford a basis for reduced charges to the public. How are railroad revenues to be maintained? Industry must pay the bill and each industry must pay its fair share.

The railroads are fortunate in that the prices for their services are stabilized. Industry's prices are subject to changes, as the relation of supply to demand varies. Deflation of prices has gone farther in some industries than in others. Over production in some industries in which production is not readily controllable has brought about financial distress and this in turn has resulted in demands for cheaper access to markets.

Rate Structure Inquiry

Demands of this character by the agricultural interests resulted in the Hoch-Smith resolution and under its direction the commission instituted the rate structure investigation. The commission's order instituting this investigation provides, in part, that its purpose is to determine what rates are unreasonable, unjustly discriminatory, or otherwise unlawful and upon what classes of traffic "compensating increases" may lawfully be required.

In its statement to the public, issued March 12, 1925, in connection with the rate structure investigation the commission said, in part:

"Changes, if any, in the rate structure of the country, under the resolution, will be made after giving due consideration, among other factors, to:

"(1) The conditions which prevail in the several industries of the country, in so far as it is legally possible to do so, to the end that commodities may freely move, consideration of which to such extent is declared by Congress to be the true policy in rate making to be pursued by the commission."

That resolution was the forerunner of a contest which I think will have far reaching consequences in determining future rate levels. The carriers took the initiative in a counter offensive movement when 74 railroads in the western district petitioned for rate increases on practically all freight traffic. There was some reason for the move in the financial condition of certain northwestern railroads and the influence of investment bankers in urging the carriers to seek a rate increase is apparent. But there was also another strategy in the situation. An application for a general rate increase might result in safeguarding the present rate levels on agricultural products from the reductions plainly recommended by Congress in the Hoch-Smith resolution. That in itself would be something of a victory for the railroads and there is some warrant for assuming that a result of that character would be so regarded by them.

Relation Is Obvious

Whatever the motives of the railroads were the relation between the two proceedings was obvious. The commission in a public notice stated that "as the issues presented in ex parte 87 (the rate increase case) constitute a necessary and important part of the issues in No. 17000 (the Rate Structure Investigation), the commission is assigning these proceedings for joint hearing." It also stated:

"Although the resolution is of broad scope, it specifically directs that, in view of the depression in agriculture therein stated to exist, the commission shall effect with the least practicable delay such lawful changes in the rate structure of the country as will promote the freedom of movement by common carriers of the products of agriculture affected by that depression, including livestock, at the lowest possible lawful rates compatible with the maintenance of adequate transportation service."

Order of Investigation

The commission has concluded that it should first deal with the western district in order:

1. To determine what products of agriculture, including livestock, are affected by depression;

2. To determine what, if any, reductions may lawfully be effected in the rates or charges on products of agriculture, including livestock;

3. To determine whether any rates, fares, or charges, either on particular classes and kinds of commodities or classes of traffic, in particular sections or between particular localities in the western district, or otherwise, may lawfully be authorized or required to be increased, and if so, to what extent, in order to compensate for such rate reductions, if any, as may be found proper; and

4. To determine whether any rates, fares, or charges, either on particular classes and kinds of commodities or classes of traffic, in particular sections

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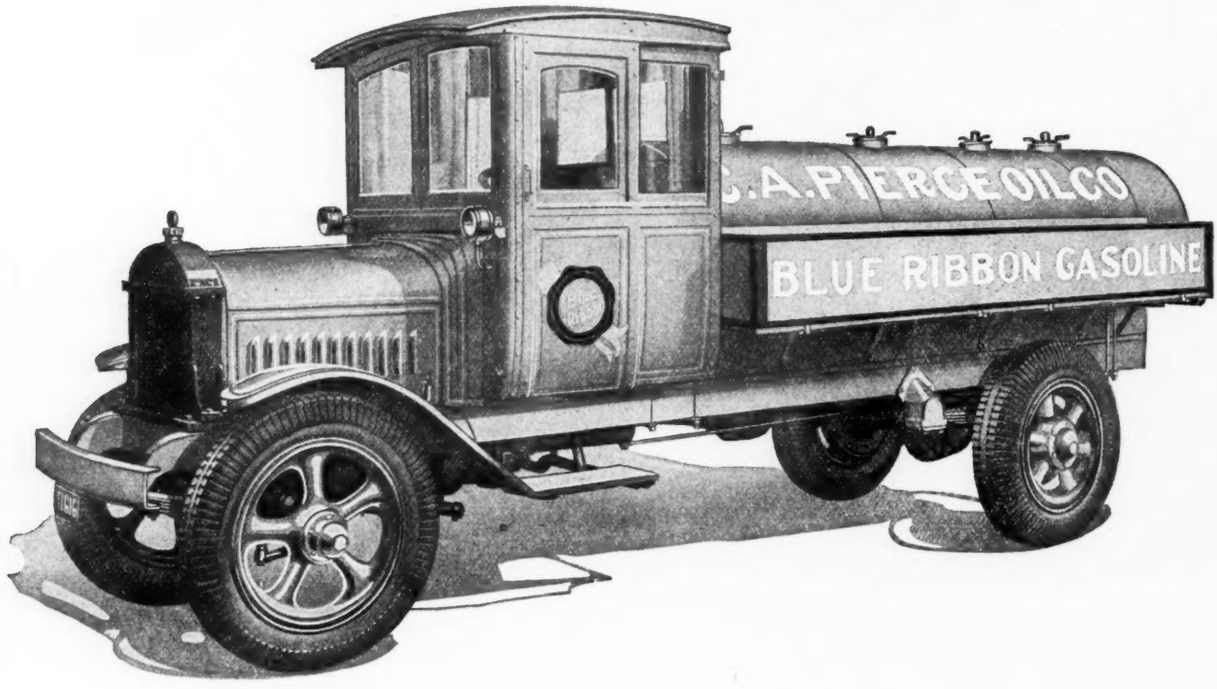

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or between particular localities in the western district, or otherwise, may lawfully be authorized or required to be increased, and if so, to what extent, in order to effect such increases in the revenues of western carriers as may be found proper.

The Contest Begins

With the issues thus joined the contest began. Many industries offered evidence but the center of the field was held by agriculture on the one side and the railroads on the other. Agriculture seeks a return to the rate levels in effect prior to the large increases in 1918 under General Order 28. The railroads ask a rate increase on the products of agriculture. The railroads presented their views of the condition of the farmers largely through local bankers and trained economists. Agriculture countered with still more economists. Testimony was offered day after day in which neither rates nor transportation were more than casually mentioned, if at all. It did not seem like a rate case. An outside observer might easily have thought that he was listening to a lecture by a teacher of economics in some school of agriculture.

When they come to the final arguments in Washington I think the railroad attorneys will say to the commission: "We have given you our views of the condition of the farmer. The farmer has given you his views. Whatever view you accept we are not limited by our application for a 5 per cent increase. The duty is upon you, under the transportation act, to initiate rates under which we can earn the stated fair return. If you are unwilling to increase rates on farm products then you must increase other rates to a point where we can earn the fair return. The burden is not upon us. It is upon you."

In this situation what will other industries say? What will the petroleum industry of the western district say?

Need of Unified Action

I have referred to these broad issues to indicate that this is a broad case. Unfortunately it finds the members of the Western Petroleum Refiners' Association divided in their counsels and engaged chiefly in a contest to determine the rate relationships of their competitive groups. I understand that contest and I do not criticize it. But I want to point out the danger of a permanent rate burden upon all groups unless the larger aspects of the rate situation are appreciated and their implications met by unified and intelligent action.

There is room, I believe, within the four walls of the association, despite all competitive differences, for a forum of constructive study out of which petroleum interests in your territory can find their place in the structure which will be formulated under the transportation act and the rate structure investigation. The alternative is that you may be asked to bear more than your fair share of the transportation burden.

When it was found that, under its rules, the association could not act in the western case, some 25 members organized themselves and took up the work. Exhibits were prepared. Mr. Moffitt and Mr. Holmes testified at the Dallas hearing. It would be out of place in these remarks to review that evidence, but if you were to read their testimony you would find it a constructive statement of the position of the Mid-Continent petroleum shipping industry. Running through it is a sense of responsibility for the railroads as well as the industry and the problem was wisely approached from the viewpoint of the real interest of the railroads themselves.

Intelligent Approach

That, it seems to me, is the key note, the intelligent approach to your whole problem. Assume that your freight rates, for the moment, were freed from the restraint of tariff publications. Assume that the railroads that serve your territory were free to change those rates at will. Do you think they would increase your rate 5 per cent, 10 per cent, 15 per cent? They might try it. But those rates would find their level. They would find their level at the point where the railroads could move the largest possible tonnage of your products at a fair profit.

We too often think of freight rates as an arbitrary matter because someone else fixes them. Nevertheless they have their proper level under the law of the supply of and the demand for rail transportation. This is clear when it is realized that, leaving all crude oil and all exported refined products out of consideration, more than 44 per cent of the refined products which go into the domestic consumption of this country, or at last 33,000,000 net tons, find a market without the use of rail transportation. The truth is that your best interests and the railroads' best interests are identical in this matter and the proof in practical figures of that identity is the greatest contribution you can make in the safeguarding of your interests and that of the railroads as well.

The day of attacking American railroads by appeals to prejudice has gone. Rate cases tried in a spirit of hostility will result in no advantage to shippers. My information leads me to believe that the railroads as a whole are rendering better service than at any previous time in their history. If this is true we should say so and give them full credit. The time has come when each industry must study its transportation requirements and problems in the light of the mutuality of interest which exists.

Peculiar Characteristics

In my remarks at Los Angeles in January I undertook to point out the peculiar characteristics of petroleum traffic by rail, the growing diversions of this traffic to other means of transportation, and their bearing upon the level of railroad rates. I believe that in the whole range of the oil industry there is no greater opportunity for constructive investigation of this subject than in the situation of the mid-continent refiners and I believe further that, despite all competitive differences, such an investigation is a proper and useful function of this association. The issues are broad and they can be met successfully only by the most liberal and complete co-operation.

Any prediction as to the outcome of the present case is hazardous but the record has been closed and I will venture my own opinion on certain phases of the commission's decision. I believe that the application for a percentage increase, or its equivalent, on practically all traffic will be denied. Rates are already so high that transportation costs are resulting in a relocation of industries and a diversion of traffic to other means of transportation. The carriers concede that an increase in passenger fares would not be to their advantage and this is certainly true as to freight rates on some commodities. What the carriers are seeking is more net revenue and there is a limit to which increased freight rates will produce more net revenue.

Furthermore, the revenue needs of the western carriers are not uniform. The northwestern roads as a whole have not been so prosperous as the railroads in the southwest. It has been clearly shown that freight rates, class and commodity, are higher in the southwest than in the northwest. These facts all argue against a uniform rate increase for the western district. Some increases in freight rates for the northwestern roads seem probable. It is not unlikely that rates on some commodities will be increased while others are left on their present level. In that possibility there is real danger for the oil industry which carries a public reputation for prosperity although the facts may be quite otherwise. To bring clearly before the commission the facts as they really exist in the oil industry is a service of great importance to the industry and the railroads as well. This association has a plain duty to see to it that such service is not impaired by competitive considerations. The railroads are also competing for business but they have learned to go to the commission with a solid front.

Better Return in 1925

Fortunately the railroads had a far better year in 1925 than in 1924. For the country as a whole they earned a net railway operating income of $1,136,984,243, the largest in their history, and an increase over 1924 of $150,266,484. The increase in net for the western district was $36,422,871, divided as between regions as follows: northwestern, $17,010,910; central western, $16,043,690; southwestern, $3,368,271.

In the western district the freight revenues in 1925 increased by $57,198,884 over 1924, but the passenger revenues were $23,614,947 less. The passenger revenues in that district in 1925 were $169,889,029 less than in 1920 and

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$85,581,036 less than in 1921, a year of depression.

The loss of passenger revenue has had a large share of responsibility for the proposals to increase freight rates. The truth of the matter is that the railroads are facing fundamental and permanent changes in their short haul traffic of both passengers and freight due to the rapidly increasing use of the automobile, the motor bus and the truck. The situation has been aptly described by the commission in a recent case in which it said:

"Applications for the abandonment of steam railway operation appear to be only one of the many indications of disturbance resulting from the advent of the automobile and other new industrial forces. The steam railroad is laboring under conditions which resemble in certain respects those encountered by the stage coach when the steam railroad came into the field."

The railroads have not as yet been able to adapt themselves to this rapidly changing situation. The use of the gasoline car in local passenger service gives promise of substantial relief in operating costs. The oil electric locomotive, a necessarily less immediate resource, may supplant the wasteful steam locomotive. Better operating methods and labor saving devices must be adopted wherever possible. A growing density of traffic which can be handled without proportionate increase in plant or maintenance will probably afford the surest source of net income. There is obviously a limit to which increase in rates can be made without interference with an increase in traffic and upon this phase of the problem both the traffic departments of the railroads and the Interstate Commerce Commission need the constructive assistance of industry.

Rules Government Need Not Pay Interocean

WASHINGTON, D. C., March 6.—U. S. Supreme Court has ruled against the Interocean Oil Co. in its suit to recover about $2,500,000 from the government on account of expenses incurred in moving oil storage tanks from Carteret, N. J., to Baltimore.

The court held that there was no contract between the oil company and the government although army officers ordered the Interocean to move the tanks so as to furnish oil for army transports in 1918. The order of the officers was never reduced to writing.

The Supreme Court also upheld the Louisiana statute imposing a tax of 25 mills per dollar on the value of oil tank cars owned by the General American Tank Car Corp. and other nonresident car owners in lieu of Parish and municipal taxes paid by resident owners of such cars. The court said the 25 mill tax was not a discrimination against nonresident owners because at any time they could domicile themselves in Louisiana and pay the local taxes.

Pure Oil Co. Encourages Employe Saving

COLUMBUS, O., Mar. 6.—Pursuant to a desire to make Pure Oil Co. employes partners in the business, President Henry M. Dawes has announced a savings investment plan under which employes are permitted to subscribe to the company's 6 per cent cumulative voting preferred stock.

The plan differs in details from plans that have been instituted by several of the Standard Oil companies. Pure Oil employes who have been in the company's service for six months previous to April 1, 1926, are permitted to subscribe to not less than 5 per cent and not more than 25 per cent of their salaries over the four years to follow next April 1. Payments are to be made in 96 equal semi-monthly installments.

The company will pay 8 per cent a year on the total subscription and charge employes 6 per cent interest on the unpaid balances. This arrangement will give the employes constantly increasing income from that subscription. The income will be paid in cash quarterly. At the end of the investment period the company will deliver the stock, or cash if it elects. In addition the company will pay the employes in cash at the end of the period a sum equal to 25 per cent of their subscription.

In case of withdrawal, resignation or dismissal, the subscriber will receive the amount he has paid into the investment fund, but will not get any of the 25 per cent bonus. In case of death of an employe the estate may receive the money paid into the fund by the employe or it may elect to continue the payments on the subscription and receive the 25 per cent cash bonus.

S. O. Indiana Agents Meet

MOBERLY, MO.—A meeting of the agents of the Quincy division of the Standard Oil Co. of Indiana, was held recently at the Merchants Hotel at Moberly, followed by a banquet. Among those who attended the meeting were A. L. Martin, manager; T. P. Jones, assistant manager; W. J. King, sales manager; J. H. Ross, chief clerk; J. W. Gooch, safety superintendent; R. R. Radke, auditor; W. C. McAdams, special representative; O. L. Durham, lubricating engineer, and W. O. Howell, agent at Moberly.

Washington Oil

PITTSBURGH, Mar. 6.—Stockholders of record March 1 will receive 1.6 shares of new $25 par stock of the Washington Oil Co. for each old $10 share held. This is equivalent to a stock dividend of 300 per cent. No fractional shares will be issued.

The annual meeting will be held April 8 and books will close March 8 before which time old stock should be exchanged for new as only new stock will be allowed to vote, it was announced.

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California's Future Yield Measured Only Partially In Estimates

By Paul Wagner
N. P. N. Staff Writer

Article 1 in a Series on Future Oil Production in California

THE American Petroleum Supply and Demand report credits California with future crude oil production of 2,139,987,000 barrels to come from a total of 125,532 acres of proved ground. There is included in this estimate a total of 932,939,000 barrels to be recovered under common methods of flowing and pumping wells from 63,303 acres classified as being proven for production but remaining undeveloped. A reserve of 1,207,048,000 barrels is credited to the producing area of 66,229 acres.

Supply and demand estimates were made up approximately a year ago. They may be considered, therefore, to represent the statistical situation, as viewed by their makers, at the beginning of 1925. Brought down to January 1, 1926 by adjustment to California production figures totalling 230,147,342 barrels in 1925, the total reserve remaining becomes 1,090,839,658 barrels.

If 1925 production is taken off the total of the area listed as producing, which is the fairest way known of adjusting these statistics, the new reserve figure becomes 976,900,958 barrels from fields now being exploited. The reserve of 932,939,000 barrels from proved but undeveloped acreage remains unchanged.

Acreage under exploitation as of January 1, 1926, had changed very little in the 12 months period preceding that date. The total, therefore, may be considered to be unchanged; and the producing area as against proved undeveloped acreage is not adjusted in bringing in the estimate down to the more recent date.

Average per acre recovery set up for California reserves, therefore, becomes 15,213 plus barrels when the total of proved ground and developed acreage is considered with relation to the 1925 production total, which adjustment brings down the estimate from 17,047 plus barrels per acre a year previously.

Using the same figures as those embraced in the Supply and Demand report, the future recovery from producing areas will be 15,798 plus barrels per acre; and from the proved but undeveloped territory 14,737 plus barrels per acre.

Acreage Yields Astounding

Astounding as they may seem to the operator whose detailed studies of acreage yields are confined to fields other than those of California, the figures mentioned are more than conservative. This statement may be made in the face even of 38,414 plus barrels average recovery already made from the 62,229 acres listed as producing. The combination of the past and future yield figures gives a total of 53,627 plus barrels per acre, against which the set-up of production to come from proved but undeveloped ground appears all the more conservative.

It is pertinent here to mention that no attempt was made in the Supply and Demand report to measure possible California production from areas within which future oil fields may be found, totalling 30,714,548 acres; nor was any set-up made of barrels of oil to be recoverable "at some price," which conceivably would bring about development of small wells now industrially unprofitable to exploit in various parts of the country.

Deep Zones Proved

Geologic correlations and the coring of oil-saturated sands at greater depths than the exploited levels of certain Los Angeles Basin fields have made certain that Southern California holds producing possibilities the extent of which must be measured in terms of future development.

These deeper possibilities have been taken into account only in part in the Supply and Demand report estimates, the writer happens to know; hence the statement that future yields estimates err, if they do at all, on the side of conservatism.

It is known that the present producing zone at Dominguez, in the Los Angeles Basin, is underlaid by a second zone proved by coring of the sand; four zones are productive at Rosecrans, although that field has never assumed major importance in comparison with Long Beach, Huntington Beach and Santa Fe Springs; a deeper zone that probably will prove productive, exists on the Inglewood-Baldwin Hills structure; two wells drilled into the so-called "99 zone" in the West Coyote field, spaced approximately 2000 feet apart, established the certainty of future production at the 4000 foot level, where the deep sand recovery is estimated at tens of millions of barrels.

Supply Report Conservative

The foregoing paragraph deals almost entirely with certainties, but on a basis of conservatism such as marks the Supply and Demand estimates from which the information is largely drawn. This information is supported by the writer's own data, which suggests more prolific yields in some instances than workers on the report were willing to postulate. It was the position of these workers that they must deal only with established data and that theory, even though well grounded, had no place in their calcultions.

Although taking no account statistically of future production to come from new zones at East Coyote and Brea-Olinda, the Supply and Demand forecasters did make such statements as the following:

"The East Coyote field offers some possibilities for a deeper zone production but its extent cannot yet be estimated . . . . Production is obtained at Brea-Olinda from a fault-contact structure rather than a closed fold; the sustained production and large undrilled reserves make this field of importance."

Areas Away from Basin

Elsewhere than the Los Angeles Basin some of the details of possible deeper production are contained in the following paragraphs:

"In the Coaling field there is evidence that deeper sands, other than those now producing, might produce. Tests made a number of years ago on the Coalinga East Side anticline proved that deeper oil does exist. This oil was produced by one well on the Standard Oil Co.'s property in section 28, which made about 80 barrels per day of oil of a mixed base, containing a considerable portion of paraffin.

"In the Sunset-Midway field most of the production so far obtained has come from a series of sands, sandy shales and clays, which rest with considerable unconformity upon a very thick series of Miocene shales. In

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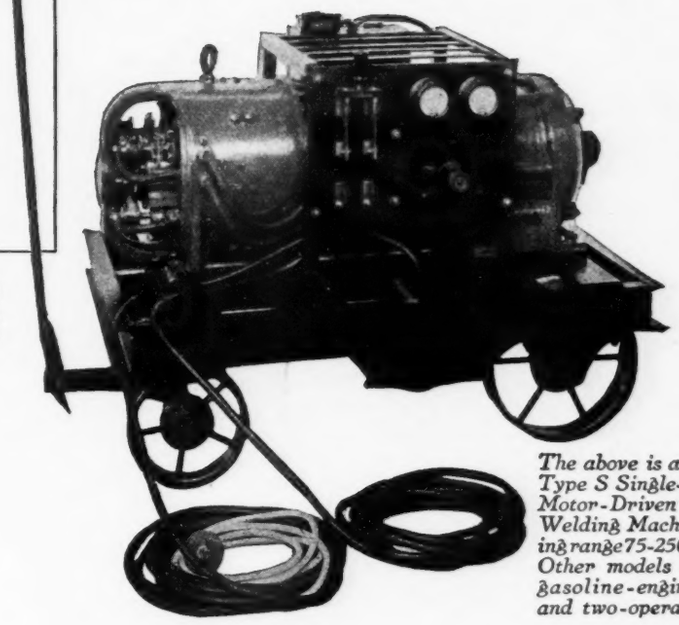

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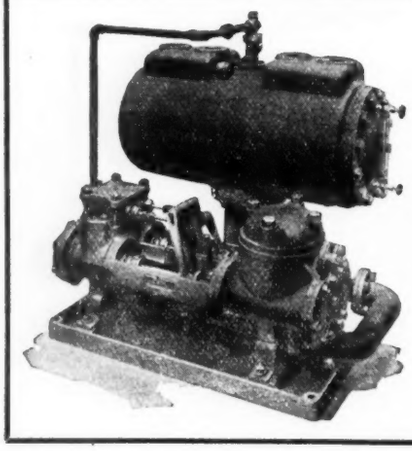

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some localities wells carried below this contact into Miocene shales have penetrated sandy members which have proved productive.

"The successful development of the Hovey Hills area is a concrete example of the possible productivity of this lower area. Wells drilled into this have produced at a rate of more than 200 barrels per day.

"In the eastern portion of the Midway-Sunset district, especially on the Buena Vista and Elk Hills structures, the brown shale has not been tested by drilling. It still remains to be proven whether or not there are under these structures oil measures such as have been found in the Hovey Hills."

The present article, which is intended as the introductory of a series dealing with the future of petroleum production in California, recounts the foregoing statistics and views of others mainly for the purpose of showing what the engineering minds of the industry on the Pacific Coast have been willing to sponsor.

Great Future Ahead

The writer's own thought, from a background of months of work in California since 1923, is that only the more apparent possibilities of petroleum production in the state have been tested. It has not been necessary for the California operator in the past to search for obscure evidence of petroleum to the extent such work has been carried forward in Oklahoma, Kansas and parts of Texas. When such a time comes and a comparable amount of similar research work has been put into play, it is suggested that California will unfold oil reserves to an extent not now dreamed about.

Succeeding articles of the series will take up various areas of California, dealing with their production possibilities, both the partially exploited and the more nearly wildcat territories coming under review.

FLINT, MICH.—Get-together meetings of employes, station operators and attendants of the Lincoln Petroleum Products Co. held each month are a means of ironing out differences and creating good will among them, is the opinion of Charles C. Tucker, manager, based on answers in reply to questionnaires sent to each of the 56 stations of the company.

A 100 per cent attendance is reported at each meeting. Well-known speakers are engaged, a supper is served and entertainment furnished. Any new conditions in the business are discussed to give employes a better understanding.

HEDRICK, IA.—Frank E. Davis, owner and manager of F. E. Davis Oil Co., has installed gasoline and kerosene storage, with tank wagon service, at Parkwood, Ia.

To his equipment at Hedrick Mr. Davis has added a new Graham Bros. 1½ ton truck, with 500-gallon tank.

Psychologist Figures Confusion In Red-Hat and Red-Crown

By Ward K. Halbert

N. P. N. Staff Writer

CHICAGO, Mar. 6

EXPERT testimony has been developed by the Standard Oil Co. of Indiana to show how much the Red Hat trade mark looks like the Red Crown trade mark, and how near "Red Hat" sounds like "Red Crown."

Standard attorneys presented this evidence in the company's patent office case against the Independent Oil Men of America in Chicago, Feb. 26, through the experiments of an eminent professional psychologist from the faculty of Chicago University.

Independent Oil Men of America is the organization within the National Petroleum Marketers Association whose members are engaged in a mutual advertising campaign in national publications.

I. O. M. A. applied to the United States Patent Office for exclusive right of its members to use the Red Hat emblem as a trade mark under which they might sell U. S. Motor specification gasoline. Standard Oil Co. entered an opposition to the issuance by the Patent Office of the Red Hat trade mark, on the ground that it is too much like Red Crown. The case has to be decided by the Commissioner of Patents who sits as a judge. In the meantime I. O. M. A. members are going ahead using the emblem. When the Patent Office authority reviews a case, no witnesses are called to testify before him. He only examines depositions taken elsewhere and presented to him in correct form.

All the Standard Oil Co's. evidence to show the probability of confusion between the two trade marks was to be in by March 2. After that date, I. O. M. A. attorneys have a reasonable length of time to answer the Standard's opposition. The hearing here took place in the office of George A. Chritton of the firm of Dyrenforth, Lee, Chritton & Wiles, 140 South Dearborn street. This firm represents Standard Oil Co., but Mr. Chritton is in charge of the case and has Edward S. Rodgers, another eminent trade mark attorney, with whom to consult along with other members of his firm.

The Legal Array

Early in the course of this litigation, Benjamin Wham, the general attorney of N. P. M. A., placed the case in the hands of a trade mark specialist, A. E. Wallace, and later Henry B. Floyd was brought in as a consultant. Trade mark law is a highly specialized branch of the profession. Even the terminology differs from ordinary practice. Instead of using the familiar terms of "plaintiff" and "defendant" in such litigation the two parties are distinguished as "applicant," the I. O. M. A., and "opposer," the Standard Oil Co. of Indiana.

Although the names of several Standard Oil Co. officials were mentioned among the witnesses who were to be examined on Friday, two expert witnesses were the only ones to depose. In the forenoon Dr. Robert E. Wilson was on the stand, a refinery technologist at the Whiting refinery. The purpose of his testimony was to show the uniformity of Red Crown gasoline, in support of the Standard's contention that Red Crown is a uniform product and may rightly be sold under a trade mark but that gasoline made by a number of small refineries from different crudes, by different processes, is not really a uniform product.

Dr. Wilson testified that Red Crown, as shipped from the company's several refineries, is almost perfectly uniform. Due to contamination and especially to evaporation in handling and in transit, there is less uniformity in it as it is sold, the greatest variance being in the initial boiling point due to evaporation. The presence of large quantities of gasoline in storage in the Standard's plants is a great help in acquiring uniformity of product and a benefit to the product, he stated.

The witness made reference to anti-knock qualities of Red Crown, and in private conversation, said that Red Crown was more uniform in reality than the gasolines made to U. S. Motor specification. "Two different refiners might both turn out a gasoline of U. S. Motor specification," he said, "each product complying fully with government requirements, and yet the two gasolines be widely different in anti-knock value, in tendency to gum, and in other respects not mentioned in the government specifications."

The Psychology Tests

It was Edward S. Robinson, associate professor of psychology at Chicago University, who occupied the stand from 11 o'clock in the forenoon to 4:30 p. m. He figured the degree of confusion in the human mind between Red Crown and Red Hat signs. Although his testimony was a little intangible to some who heard him, it was interesting in the extreme to hear two highly specialized patent lawyers examine and cross examine a psychological expert, than which probably there is nothing more highly specialized. In brief, here are the experiments:

First Mr. Robinson took two gray cardboards and pasted seven more-or-less familiar trade marks on each of them. Some of the trade marks appeared on both cards and some did not. Red Hat was on one card and Red Crown was on the other. He exposed both of these cards to the scrutiny of his students at the university for five seconds each and asked them to write down the duplications; thus to determine how many of the group mistook Red Hat for Red Crown.

One card contained trade marks for Foster Pineapple; Aunt Jemima's Bran Fluffs; Danderine; Elite Cocoa; Red Hat Gasoline; Dr. Miles Nervene, and Zo Breakfast Food. The other card contained trade marks for Libby's Chili Con Carni; Red Crown Gasoline; Foster Compressed Pork; Foster Pineapple; Elite Cocoa; Quaker Oats, and Danderine. The results according to Mr. Robinson showed that three times as many mistakes were made in the Red Hat and Red Crown combination as in the average of the others. More students went wrong on the gasolines than on any other trade mark.

They Sound Alike

The other experiment was made in an auditory way. Mr. Robinson listed 30 trade names. Eleven of the names appeared in the list only once and among them was Red Crown and Red Hat. The other nine appeared twice (i.e. there were nine cases of actual repetition). The result, according to the witness, showed that 21 mistakes were made on the Red Hat and Red Crown, (being mistaken for the same thing) to one mistake averaged on the others.

In the cross examination, Mr. Wallace brought out the points that Mr. Robinsons' testimony was made for the occasion; that Red Crown and Red Hat were the only two trade marks having to do with the same product in the visual test; and the only two white trade marks in the visual test. The cross examination was not extensive however.

Texas Jobbers' Luncheon Meetings Valuable

EL PASO, TEX.—Luncheon meetings as a means of creating good will and friendship among competing oil jobbers within the state, are proving both successful and popular in Texas, according to the bulletin of the Texas Independent Oil Men's Association, with headquarters here.

Personal contact and friendly get-togethers do much to eliminate misunderstandings, the bulletin states, because "when you've broken bread with a man, you're less apt to take unfair advantage of him."

The necessity of an occasional new coat of paint and neatness about the independently owned service stations is stressed in the bulletin, the lack of which at some of the Independent stations causes loss of business and money.

The spring meeting of the association is scheduled for March 4 at the Texas Hotel, El Paso, according to R. N. Mullin, president.

Refinery Products Directory

GASOLINE AND NAPHTHA

OKLAHOMA

56-58 450 E. P. Gasoline
★Bolene Refg. Co., Enid, Okla.
58-60 450 E. P. Gasoline
★Bolene Refining Co., Enid, Okla.
58-60 U. S. Motor Gasoline
★Bolene Refg. Co., Enid, Okla.
60-62 400 E. P. Gasoline
Altitude Petroleum Co., Tulsa, Okla.
64-66 390 E. P. Gasoline
★Bolene Refining Co., Enid, Okla.
68-70 350 E. P. Gasoline
Altitude Petroleum Co., Tulsa, Okla.

PENNSYLVANIA

50-52 Naphtha
Emery Mfg. Co., Bradford, Pa.
54-56 Naphtha
Emery Mfg. Co., Bradford, Pa.
58-60 Straight-run Gasoline
Emery Mfg. Co., Bradford, Pa.
60-62 Straight-run Gasoline
Emery Mfg. Co., Bradford, Pa.
62-64 Straight-run Gasoline
Emery Mfg. Co., Bradford, Pa.
64-66 Straight-run Gasoline
Emery Mfg. Co., Bradford, Pa.
68-70 Straight-run Gasoline 305-320 E. P.
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
70-72 Straight-run Gasoline 300-305 E. P.
Emery Mfg. Co., Bradford, Pa.

NATURAL GASOLINE

OKLAHOMA

Grade A
Altitude Petroleum Co., Tulsa, Okla.

BURNING OILS

OKLAHOMA

42-44 Water White Kerosene
Altitude Petroleum Co., Tulsa, Okla.

PENNSYLVANIA

45 Water White Kerosene
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
46 Water White Kerosene
Emery Mfg. Co., Bradford, Pa.

NEUTRAL OILS

PENNSYLVANIA

150 Vis. No. 3 Asso. Filt.
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
180 Vis. No. 3 Asso. Filt
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
200 Vis. No. 3 Asso. Filt
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
34 Gravity 350-360 Flash
Pennsylvania Oil Products Refg. Co., Warren, Pa.

CYLINDER OILS

PENNSYLVANIA

600 Steam Refined
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
635 Steam Refined
Emery Mfg. Co., Bradford, Pa.
650 Steam Refined
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.
600 Flash Steam Refined
Emery Mfg. Co., Bradford, Pa.
600 Warren E
Pennsylvania Oil Products Refg. Co., Warren, Pa.
600 Oil City E
Pennsylvania Oil Products Refg. Co., Warren, Pa.
Cold Test Stock (bright filtered)
Pennsylvania Oil Products Refg. Co., Warren, Pa.
Cold Test Stock (dark filtered)
Pennsylvania Oil Products Refg. Co., Warren, Pa.
Black Oil
Emery Mfg. Co., Bradford, Pa.

MOTOR OILS

PENNSYLVANIA—100% PURE
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.

WAX

PENNSYLVANIA

122-124 White Crude Scale
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.

FUEL OILS

OKLAHOMA

24-26 Zero Fuel Oil
Altitude Petroleum Co., Tulsa, Okla.

PENNSYLVANIA

36-40 Fuel Oil
Emery Mfg. Co., Bradford, Pa.
Pennsylvania Oil Products Refg. Co., Warren, Pa.

New Oil Station Construction

National Petroleum News

Tracy, Minn.—Tri-County Co-Operative Oil Association has just been organized and a site for a service station is being sought. F. B. Richardson is president; W. G. Workman, vice president; L. T. Andrew, secretary and C. C. Richard, treasurer.

Jackson, Minn.—Martin County Co-Operative Oil Co. has been changed to Peoples Co-Operative Oil Co. The company will build and operate bulk and service stations.

Stanton, Neb.—Arthur H. Ahlman, of Norfolk, Neb., bought interest in Namur's garage at Stanton, which will be remodeled into filling station.

St. Charles, Mo.—Edward C. Hische has bought property, on which his son, Oscar, will erect filling station and confectionery store.

Owatonna, Minn.—Mickleson Bros., theatre proprietors, have leased property on which a filling station will be built.

Fort Dodge, Ia.—A. C. Gienapp to erect service station; also Robinson Bros. will build one early this spring.

Lamar, Mo.—Judge McAdow plans to erect filling station here. Ben Weidman is erecting filling station.

Victoria, Tex.—T. M. Horadam, local agent for Gardner automobiles, is building filling station and garage.

Prescott, Ark.—Theo. Elgin purchased property on which filling station will be erected immediately.

Siloam Springs, Ark.—The Jones Supply Co. to erect shop, garage, office and filling station.

Little Rock, Ark.—Standard Oil Co. of Louisiana purchased site for filling station.

Atlantic, Neb.—W. O. Anker and W. H. McClelland to build filling station.

Tyler, Tex.—P. O. Monsey Oil Co. plans to build filling station here.

Mapleton, Minn.—Equity Elevator Co. plans building filling station.

Helena, Mont.—The Texas Co. to erect service station.

Burwell, Neb.—LeRoy Anderson to build filling station.

Holdrege, Neb.—F. J. Magnuson and W. E. Brown have purchased three lots, on which will be built cottages and tourist park, and the Dunlavy Oil Co. is expected to erect a filling station on an adjoining lot.

Bryan, Tex.—The Texas Co. is building filling station here. Another filling station is being erected here by Chambers-Wilson Motor Co., which will be operated by the Home Oil Co.

Sioux City, Ia.—Dakota County Co-Operative Oil Association, Dakota City, contemplates building filling station at Sioux City.

Waupaca, Wis.—Wadhams Oil Co., Milwaukee, will erect filling station here. Gray Czeskleba will build filling station.

Columbus, Neb.—Charles M. Juhnke, and others, seek permit for filling station at 13th St. and Meridian Ave.

Thief River Falls, Minn.—Peoples Oil Co., Bemidji, Minn., bought property here for $5,000 filling station.

Aurora, Mo.—Ozark Oil Co., with general offices here, is erecting filling station at Marionville, Mo.

Mineral Wells, Tex.—Oak Park Grocery and Filling Station plans to build a drive-in service station.

Blytheville, Ark.—Standard Oil Co. of Louisiana bought property for service station.

Delaware, O.—T. M. Henderson, city councilman, bought site for service station.

Glasgow, Mont.—Magruder Motor Co. plans filling station in Nashua, Mont.

Glenwood, Ia.—Standard Oil Co. of Indiana leases site for filling station.

Randolph, Neb.—Glen Clark and C. C. Hill to build filling station here.

Waverly, O.—W. L. Armintrout will build filling station and garage.

Grafton, N. D.—Roy J. LaMarre purchased site for filling station.

Zanesville, O.—Zane-Grey Motor Co. building filling station.

Enid, Okla.—B. O. Walker to build filling station.

Here & There

National Petroleum News

J. J. McCarthy, who was formerly traveling representative in the advertising department of the Indian Refining Co., Lawrenceville, Ill., and editor of "Oil Power News," that company's itinerant newspaper, has resigned from that company and is now with the H. K. McCann Co., New York City, advertising agency.

The McCann company specializes in petroleum advertising, and handles the accounts of Standard Oil Cos. of New York, New Jersey, Nebraska, California, the Continental Oil Co. and the Imperial Oil, Ltd. of Canada.

The itinerant newspaper, which was the Indian company's official house organ, was unique in that it was published in regular newspaper style and on the press of the local newspaper of any city or town where Mr. McCarthy happened to be stopping.

* * *

E. I. Lejuste, who for many years has been with Roy Fisher, of the Fisher Industries, Inc., Detroit, Mich., has been appointed sales manager for that company with headquarters at Detroit. Mr Lejuste will devote most of his efforts to tank car sales. The Fisher company markets petroleum products direct to consumers.

* * *

C. L. Quist, president of the Paramount Oil Co., Inc., Yakima, Wash., recently returned from a 600 mile auto trip to Bend, Ore., where he visited an old friend. Although the trip was made in a storm of high winds and rain, no mishap occurred and Mr. Quest reports grain crops in good shape.

* * *

H. F. Warner, district sales manager at Seattle, Wash., for the Union Oil Co. of California, Los Angeles, recently held the annual sales meeting and banquet which was attended by all agents and salesmen in the district. Sales promotion ideas were discussed.

* * *

C. W. Van Hook, commission agent at Miami, Ariz., for The Texas Co., after 13 years of continuous service with that company, resigned on Jan. 1 of this year to devote his entire time to his other interests.

* * *

F. C. Anforth, credit manager for the Rio Grande Oil Co., Los Angeles, has been away on a business trip through Arizona, New Mexico and Texas.

* * *

W. J. Schnur, sales manager for the Noble Oil & Gas Co., was confined to his home in Tulsa last week, suffering from influenza.

* * *

H. F. Koch, proprietor of H. F. Koch Stations Co., Evansville, Ind., has returned from a trip to Cuba.

W. H. Trimble, president of the Western Oil Refining Co., Indianapolis, Ind., and president of the Indiana Independent Petroleum Marketers Association, has been appointed a director of the National Petroleum Marketers Association, Chicago. Mr. Trimble succeeds Frank Enz, who resigned as a result of his business being taken over by the Marland Refining Co., Ponca City, Okla.

* * *

W. D. Hollomon, with the Standard Oil Co. of Kentucky, Louisville, has been promoted to general salesman. Mr. Hollomon will have charge of eight bulk stations in East Mississippi.

S. H. Wilds, formerly with the Gulf Refining Co. of Louisiana, is now agent and salesman at Meridian, Miss. for the Standard Oil Co. of Kentucky, Louisville.

* * *

Harry Bradley, president of the Empire Gas & Fuel Co., Ltd., Wellsville, N. Y., accompanied by Mrs. Bradley, the Misses Marion and Elizabeth Bradley, Harry and Miss Sue Breckenridge, are on their way to Honolulu for a short vacation. The party is stopping at New Orleans, Los Angeles and San Diego, Calif.

* * *

Lee Scott vice president of the White Eagle Oil & Refining Co., Kansas City, Mo., in charge of the production, land, and pipe line departments, with offices at Wichita, Kan., recently returned from an extended trip into southern Texas oil fields. Mr. Scott was accompanied by Mrs. Scott.

* * *

Mark U. Weber, Denver, Colo., vice president of the Plaza Oil Co., Indianapolis Ind., was in Indianapolis recently looking over his interests there, and also at Muncie and Ft. Wayne, Ind., according to R. H. Daugherty, general manager.

* * *

Robert W. McDowell, formerly assistant sales manager of the Producers & Refiners Corp., Denver, Colo., has left that company and returned to Tulsa. Mr. McDowell's plans for the future have not yet been announced.

* * *

T. A. Morgan manager of the pipe line and crude purchasing departments at Wichita, Kan. for the White Eagle Oil & Refining Co., Kansas City, Mo., recently visited the company's headquarters at Kansas City.

* * *

P. C. Hubbard, formerly secretary and treasurer of Kendall Refining Co., Bradford, Pa., is wintering at St Petersburg, Fla.

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PRUDEN SYSTEM

Made ENTIRELY of STEEL

All Pruden units are fabricated to be quickly put up without the aid of any wood whatsoever giving you the advantage of strong, ABSOLUTELY fireproof construction.

Pruden System buildings are handsome, economical and portable. They can be perfectly insulated against heat and cold.

Agents wanted

Some one of the wide variety of styles, sizes and prices of Pruden System buildings will exactly meet your requirements.

Metal Shelter Co

Wabasha & Water Sts.
SAINT PAUL, MINN

A. J. Stevens Grease & Oil Company
Kansas City, Mo.

WHATEVER your location, or distance, OUR QUALITY and SERVICE, Special LITHOGRAPHED CANS, your name and brand, makes it worth while to ask us, before BUYING OR CONTRACTING.

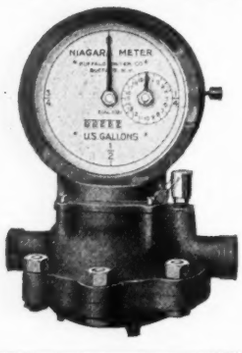
GREASE FOR EVERY PURPOSE. OIL SOAPS and Specialties for the JOBBER ONLY.

WRITE US NOW!

ZERO GREASES FOR ZERO WEATHER

A. J. STEVENS GREASE & OIL CO.
Kansas City, Mo.

NIAGARA GASOLINE METERS



quickly pay for themselves by detecting waste or theft of oil. There are types for all uses, on gasoline, kerosene, lube oil, or fuel oil. Write us—get a catalog—find out for yourself.

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GULF Refining Company

General Sales Offices
PITTSBURGH, PA.
District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia

REFINERS OF OKLAHOMA TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

Industrial Notes

Midwest Piping & Supply Co., in a letter sent out by J. McC. Moffett, secretary, announces to the refining industry that C. S. Simon has been placed in charge of the Tulsa office of the company at 805 Mayo building. The letter carries a small photograph by way of introducing Mr. Simon, and says:

"Mr. Simon is a practical man—a man who can talk your language and intelligently consult with you on your piping problems. For the last two and a half years he has been master mechanic at the Wood River refinery of the Roxana Petroleum Corp. For seven years Mr. Simon was construction engineer with the Pacific Gas & Electric Co. He also had one year as field engineer for the Petroleum Rectifying Co.

"Please remember that Mr. Simon is in Tulsa to serve the refiners and natural gasoline manufacturers of the Mid-Continent. Whenever he can help you, call upon him freely. He will be very glad to assist you in any way he can. His office is 805 Mayo building and his phone number is 3-7186."

Guarantee Liquid Measure Co., Rochester, Pa., manufacturer of Fry-Marvel pumps and other oil and grease dispensing equipment, has appointed the following representatives to handle its line in their respective cities: Edward R. Mowbray, Land Title Bldg., Philadelphia; Edwin A. Headland, Bransom Bldg., Buffalo, N. Y.; Oscar Honnet, E. Genesee St., Syracuse, N. Y.; Wilbur W. Craig, Main St., Hartford, Conn.; Walter McAdams, vice president, 17 Battery Place, New York City, and Frank E. Carney, R. T. Green and John T. Gossett, New York City.

Arthur Harris & Co., Chicago, engineers, has developed a new float for high pressures. It is known as the Harris super-built and is made of aluminum. It is one-piece, is heavily nickel plated to prevent corrosion and give it a smooth surface. Tests have proven that the float may be used for pressure up to 1500 pounds per square inch, the company states. It is being made in 2½ to 12 inch sizes.

Industrial Catalogues

Boiler Engineering Co., Newark, N. J.—A Beco baffle wall, which is said to be an improved baffle, has been placed on the market by J. W. Putnam, general manager of the company, who claims to have pioneered the baffle wall business. Construction features are pointed out, including the fact that the new baffle is a strip of corrugated sheet metal, that it is superior to monolothic construction, it is flexible, and gas tight.

Oil Patents Issued Recently

MISCELLANEOUS

Grease-Dispensing Apparatus.—Jacob Baldner, Xenia, Ohio. Filed June 7, 1921. No. 1,570,032.

Pulverized-Fuel Apparatus.—Joseph K. Blum, Scarsdale, and Daniel L. Braine, Brooklyn, N. Y., assignors to K-B Pulverizer Corp., N. Y. Filed June 8, 1923. No. 1,570,037.

Process of Treating Bituminous Substances.—George W. Acheson, Caldwell, N. J. Filed Aug. 14, 1924. No. 1,570,193.

Method of Recovering Oil from Oil-Bearing Sands.—David C. Collier, Santa Fe, N. Mex. Filed Apr. 8, 1921. No. 1,570,205.

Process for Separating the Phases of Emulsions, Particularly of Petroleum, by Means of an Electric Current.—Jan Heinrich Christoph de Brey, The Hague, Netherlands, assignor to Naamlooze Vennootschap Batafsche Petroleum Maatschappij, The Hague, Netherlands. Filed Apr. 11, 1924. No. 1,570,209.

Weighing Machine for Liquids.—Eugene Gase, Saginaw, Mich., assignor to Baker-Perkins Co., White Plains, N. Y. Filed Jan. 28, 1924. No. 1,570,300.

Metallic Roof for Tanks.—Joseph T. Maguire, Chevy Chase, Md. Filed May 19, 1924. No. 1,570,311.

Fuel Gasifier for Kitchen Ranges and Like.—Friedrich Allendorf, Frankfort-on-the-Main. Germany, assignor to Jacob Rosenberg, N. Y. Filed Aug. 18, 1923. No. 1,570,325.

Method of Producing Aluminn.—Rudolf Jacobsson, Kagerod, Sweden. Filed Aug. 25, 1924. No. 1,570,353.

Filtering Apparatus.—Paul H. Crawford, Palo Alto, and John F. Abbema, Oakland, Cal. Filed Mar. 31, 1921. No. 1,570,374.

Safety Attachment for Tanks.—Jacob Cohn, N. Y., assignor to Non-Explosive Corp. of America, N. Y. Filed July 26, 1924. No. 1,570,461.

Weighing Liquids.—Eugene J. Gase, Saginaw, Mich., assignor to Baker-Perkins Co., White Plains, N. Y. Filed May 15, 1923. No. 1,570,471.

Absorbent Material and Process of Making Same.—Clark S. Teitsworth, Lompoc, Cal., assignor to The Celite Co., Los Angeles. Filed Mar. 27, 1924. No. 1,570,537.

Purification of Gas.—John William Cobb and Henry James Hodsman, Leeds, England. Filed Jan. 5, 1925. No. 1,571,624.

Prevention of Fuel Knock.—Thomas Midgley, Jr., Dayton, Ohio, assignor to General Motors Corp., Detroit. Filed Sept. 18, 1923. No. 1,571,862.

Gives Employes Insurance

KANSAS CITY, March 6.—Lion Oil Refining Co. of which E. C. Winters is president, has put into effect group life insurance with permanent disability provisions for all employes that have been in the company's service six months or longer. The insurance totals $200,000 and policies run from $500 for employes with six months' service to a maximum of $2,000.

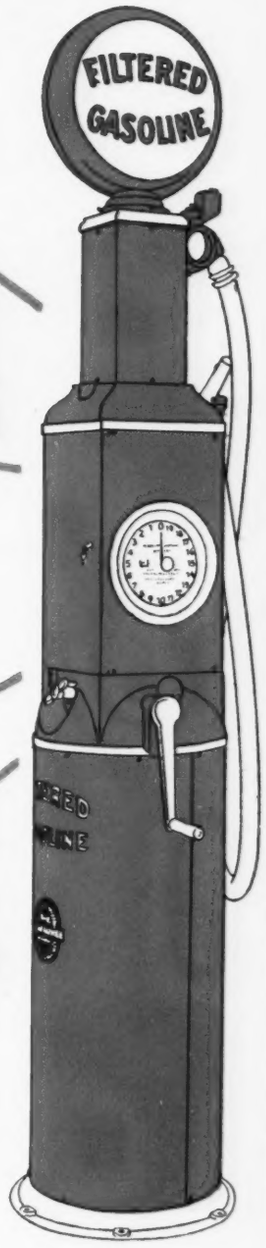
Minnesota Company Changes Name

JACKSON, MINN., Mar. 6.—People's Co-Operative Oil Co. is the new name of the corporation organized in this community as the Martin County Co-Operative Oil Co. Charles Krueger is president of the company and J. A. Trude is secretary.

YAKIMA, WASH.—The Union Oil Co. of California is endeavoring to lease two service stations here to private operators.

The Real Piston Pump
Watch These Features

1. Automatic piston return—continuous forward pumping. No gear train.
2. Weather-proof construction—fully enclosed. About half the usual number of parts.
3. Two 20 gallon dials under glass. The finest and most accurate meter.
4. Great speed—delivers more gas per crank revolution.



The climax of fourteen years' steady development

Milwaukee Type 364

Other features: Lock in meter, filter, adjustable stops, visible flow indicator, operating parts easily accessible. This accurate, durable pump, through volume production, is priced unusually low. Write for details and prices.

MILWAUKEE TANK WORKS
Milwaukee, Wisconsin

MILWAUKEE TANK WORKS

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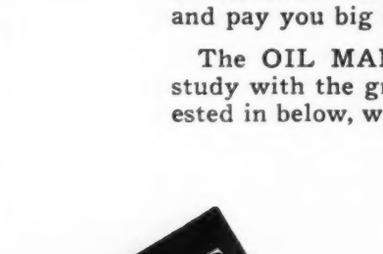
Oil Man's Bookshelf

"THE MAN OF DECISION IS THE MAN WITH A VISION."

Decide *today* to read at least one good book devoted to your particular branch of the oil industry. Get the *reading habit*. It will give you vision and pay you big dividends.

The OIL MAN'S BOOKSHELF will help you select books you can study with the greatest profit. If you don't find the subject you are interested in below, write us. We will be glad to get the book you want.



This is the complete story of *"Gasoline"* told in popular language, and written by an authority on the subject of its use in motor cars—T. A. Boyd, head of fuel oil section, General Motors Research Corp.

What gasoline is, where it comes from, its properties, what distinguishes good gasoline from bad, how the motorist can get more miles out of a gallon, and help in the economy of this important fuel—all these facts are given in chatty, non-technical style and profusely illustrated.

***"Gasoline"* is a message to the public that has so often been recommended to the oil industry. Every man engaged in the making and distributing of motor fuel should read it.**

206 pages—popularly priced at $2.50.

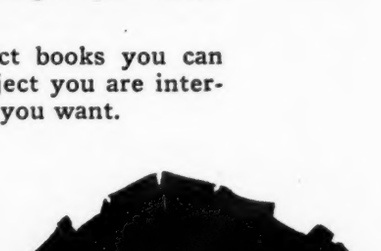
OIL-FIELD EXPLORATION and DEVELOPMENT

OIL-FIELD EXPLORATION and DEVELOPMENT by Dr. A. Beeby Thompson is a monumental work on the development of better methods of drilling and producing oil. Dr. Thompson is an authority on fields in Europe, the United States, South America and Mexico where he has operated.

Volume I covers Oil-Field Principles; Volume II, Oil-Field Practice. An incident which occurred several years ago in connection with the author's first book on oil field development gives an idea of the extremely practical information in these volumes.

An Ohio operator reshot a producing well and when cleaned out after the shot, found the well to be entirely dry. He remembered reading in Dr. Thompson's book about a stunt tried out in Galicia. He tried it, restored capillary action in the sand and the well is pumping yet.

OIL-FIELD EXPLORATION and DEVELOPMENT is a gold mine of practical information for the production engineer and field man. Both volumes $36—1178 pages, or $18 per single volume.



How to select, how to apply, and how to use lubricants is thoroly discussed in "Practice of Lubrication," by T. C. Thomsen, consulting engineer.

The subject of lubrication is so intimately connected with the mechanical and operating conditions of engines or machinery; this book presents for each type of engine and class of machinery, the "technical background" necessary to determine the character of the oils required to give the best service.

It points out the conditions under which lubricants have to work for particular types of machinery and the influences to which they are subjected during use.

"Practice of Lubrication" is a thorough and exhaustive treatment of every phase of lubrication.

610 pages, 227 illustrations—$6.00.

Cut and Mail

National Petroleum News,
839 Caxton Bldg., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____

- ☐ GASOLINE by T. A. Boyd
- ☐ OIL-FIELD EXPLORATION AND DEVELOPMENT, by A. Beeby Thompson
- ☐ PRACTICE OF LUBRICATION, by T. C. Thomsen

NAME _____

Address _____

_____

_____

ON THE LAZY BENCH

National Petroleum News

"TURNS ON THE STEAM," DOES COL. WALTERS

Official Auctioneer of Osage Leases Entertains the Kansas City Star's Reporter, as Set Forth in That Paper Recently.

"Well, sir, I had been driving around old Kansas City for a long time in my steamer. I was feeling pretty sore. I had been looking for a fellow to smash him in the nose. As I said, I wasn't feeling any too good as I was jogging along on the concrete down around Lawrence, heading home. I guess my steamer was doing about 50—just going easy-like.

"Pretty soon a car passed me and a lady leaned out of it and said: 'Goodby, grandpa.'

His Anger Is Aroused

"Well, sir, that made me so mad I just cussed. I reached down and turned on some steam. Kept getting a little faster. Fifty, sixty, seventy—I just kept turning on a little more steam. Then I looked down and saw I was going seventy-five miles an hour and I knew I had 'em. The car ahead of me was just rolling and pitching and I actually thought those folks was a going to jump right out of that car. But I just turned on a little more steam.

"Pretty soon one of the ladies fainted. You know, sir, I could never stand to see a lady in distress, so I reached down and turned off a little steam. My old steamer began to slow down a trifle and I kept on turning off steam. I just let a little daylight between my steamer and their car and dropped back a little way. Then, gentlemen, I just let the old steamer out. I went past that car like it was standing still.

"I looked down at my guage and I saw I was going ninety miles an hour. Then I saw two streaks of fire going back from each side of my steamer. I was going so fast I was setting the air on fire, I guess. Anyway, I knew I'd better slow up. So I just turned off a little steam and, gentlemen, I give you my word of honor, it took me fourteen miles to bring that old steamer back to fifty miles an hour."

❦ ❦ ❦

Going to Press!

Father: "But, my boy, she's only a printer's daughter?"

Sheik: "Oh, that's alright. I LIKE HER TYPE!"

❦ ❦ ❦

"I hear Jones' new play is a tragedy."

"Yes, he found it necessary to kill his hero."

"How did he manage it?"

"By giving him some heroin."

Better Bred

Barber: "Your head is sadly in need of a shampoo, sir."

Tailor (in the chair): "Yes, and your clothes are decidedly shabby, but I don't nag you about it."

❦ ❦ ❦

Both Sides

Roberts: "When you have an argument at your house, does your wife ever take part?"

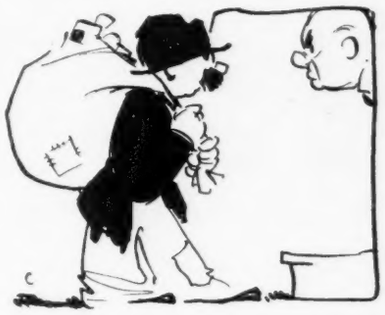
Robertson: "No, she takes all of it."

❦ ❦ ❦

Anxious to Know

Drill Sergeant (to awkward recruit): "Didn't you hear 'About turn'?"

Recruit: "No. What about 'im?"



Junkman: "Any rags, papers, old iron?"

Householder (angrily): "No, my wife's away."

Junkman: "Any bottles?"

❦ ❦ ❦

And No Change

"Some socks at a dollar a pair? What number do you wear, Sir?"

"Two, you idiot—don't get smart!"

❦ ❦ ❦

News Editor: "Did you interview the celebrity?"

Reporter: "Yes."

"What did he say?"

"Nothing."

"I know that. But how many columns of it?"

❦ ❦ ❦

The two little girls were on their way home from Sunday School, and were solemnly discussing the lesson.

"Do you believe there is a Devil?" asked one.

"No," said the other promptly. "It's like Santa Claus; it's your father."

❦ ❦ ❦

Mrs. Stick: "I suppose she gave up music when her husband died?"

Mrs. Stamp: "No; she still plays, but only on the black keys."

PETROLEUM
and its Products

WRITE OR WIRE
FOR QUOTATIONS

Marietta, Ohio Refinery
operated on Pennsylvania Crude

Findlay, Ohio Refinery
operated on Ohio Crude

Coffeyville, Kansas Refinery
operated on Midcontinent Crude

The
NATIONAL REFINING Co.
National Headquarters
NATIONAL BLDG.
CLEVELAND OHIO

3 MODERN REFINERIES
COFFEYVILLE, KAN.-FINDLAY, O.
MARIETTA, O.

Something New in Cases

The bottles are held securely at the bottom by a narrow ledge, and at the top by a spring clip around their neck. There is a partition between each bottle which eliminates any chance of breakage and scratched labels.

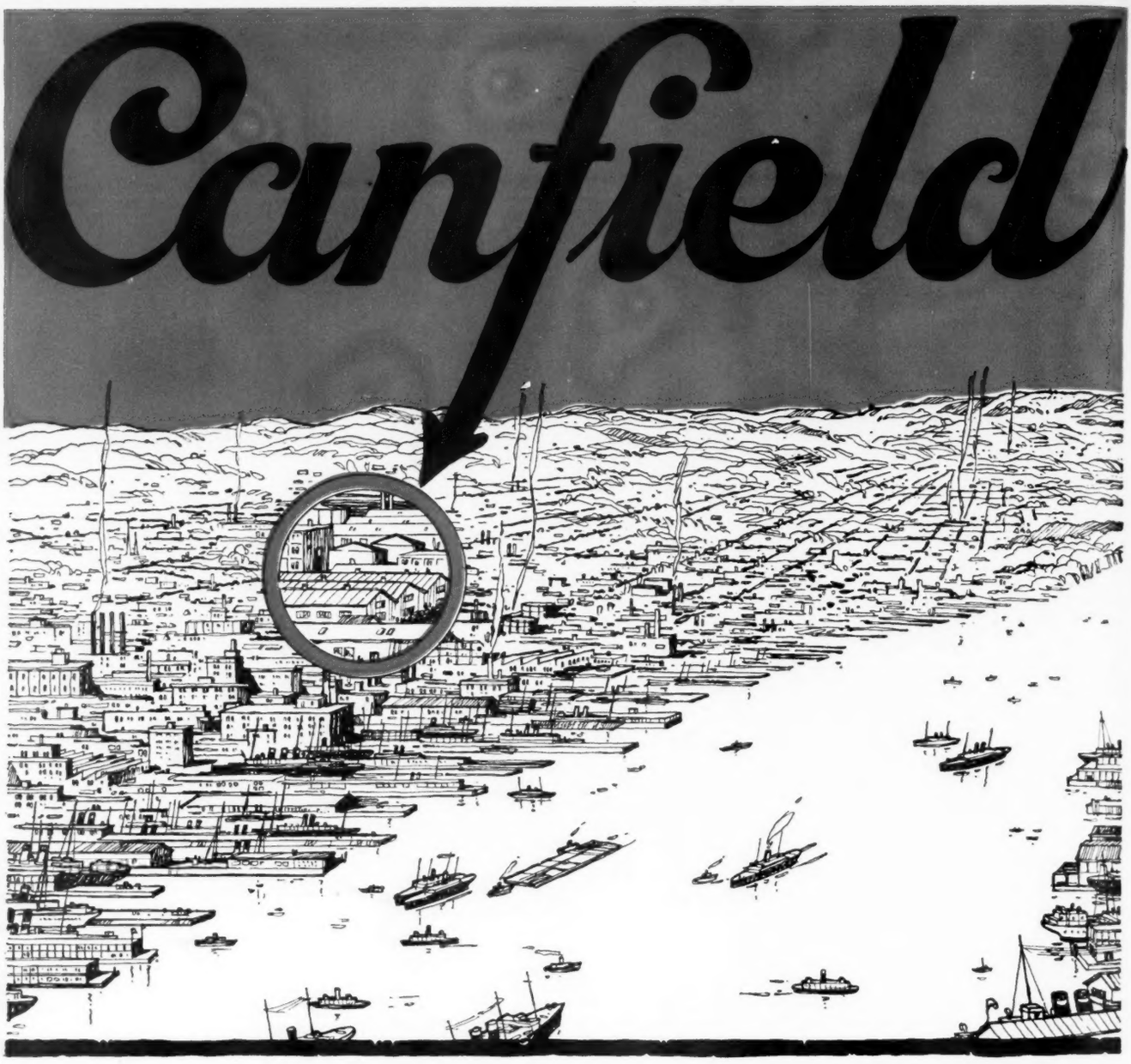
The case itself has a stiff box frame, covered with smooth black cowhide, French sewed at edges, and lined with red velvet. Contains fourteen 4 oz. cut-bottom bottles with metal capped corks and ten ½ oz. squat grease jars held by adjustable bar. 209 Complete, with your name embossed in gold, only $13.15

Other Styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware KANSAS CITY, MO.



Canfield Jersey City Plant

ALMOST within the shadow of the towers of Manhattan—and literally within quick trucking range of every Jobber in New York and Greater New York, is Canfield's plant in Jersey City.

Opened in 1922 on a rather limited scale, this branch has been enlarged and developed, until today it practically duplicates the service of our No. 1 Compounding Plant at Cleveland, and its type of production is much the same.

The Canfield Jersey City Plant carries an ample stock of the famous Premium, 100% Pure Pennsylvania, Motor and Tractor Oils, as well as Canfield Filtered Motor Oils (Midcontinent) and other Western and Texas Motor Oils, in addition to these complete stocks of Pennsylvania and Midcontinent Bright Stocks, Steam Refined Stocks and Neutrals, Red Oils, Paraffine Oils, etc.

Complete facilities for compounding according to customer's special order, have also been established at Jersey City.

We have provided excellent trucking service and are within forty minutes of Manhattan Island via truck and ferry. Completion of the new Vehicular Tunnel will speed up deliveries still further, as one of the entrances will be right on Tonnelle Avenue, only two blocks from our plant.

Are *you* getting full benefit of Canfield Quality, Facilities and Service? Canfield will go *more* than half-way, if you'll say the word.

Phone Montgomery 5699 and your wants will be supplied promptly; that's a worth-while "first step" for both of us.

Refinery - Tank Wagon Markets

National Petroleum News

Burning Oils Strong but Gasoline Is Stagnant in Mid-Continent

Staff Special

TULSA, March 8

AS far as the Mid-Continent refinery markets were concerned this week, the Western Petroleum Refiners Association convention at Fort Worth could not have been much more conveniently scheduled.

The lack of demand for most refined products, which has characterized the market for the last several weeks, held sway the first week in March and refiners and their sales managers found little difficulty in getting away from their offices.

Prices remained generally unchanged, however, and the market was steady but stagnant. Kerosenes, higher gravity fuel oils, gas oil and distillates again showed the only signs of life. Demand for these products held up fairly well, and they were scarce.

What steps the refiners will take with reference to the markets after their gathering at Fort Worth remains to be seen. Many of them had not returned to their offices today, and those who had returned were just beginning to get the "feel" of the market again.

Believe Bottom Reached

A well defined note of optimism prevails throughout the field despite the continued lull. Several factors are responsible. The major one, perhaps, is the fact that refiners feel that the period of storage is almost over. They have been putting most of their excess products in storage rather than sell them at a loss at present prices.

They feel that the bottom of the market has been definitely established. Present crude prices appear firmly established for some time to come. It is generally believed that any crude change will be upward.

But feeling that demand will soon begin to cut into stored goods in addition to taking all new production, refiners have been clinging to their prices regardless of repeated efforts to break them. They have held their prices even in the face of cheaper goods shoved out when marketers found themselves long on purchased goods and no demand.

Present weather conditions also are doing their bit to keep up the morale of the refiners. The weather the last week through the Mid-Continent area has been generally pleasant, and refiners feel spring with its increased demand for gasoline isn't far away.

It might be well for refiners to remember, however, that spring in the consuming area is considerably farther away than in the producing sections of the Mid-Continent. Last year April was the "springy" month, but it will be remembered that in 1924 June was here before the north and east began to feel the spring.

But the fact remains, that peach trees are in bloom in northern Oklahoma, the air is balmy, and refiners are feeling as cheerful as could be expected under present conditions.

Refiners generally believe that most of March will be draggy as January and February have been, yet they appear reluctant to commit themselves on prices over the entire month. While some orders have been booked for over the month at present spot market prices, others are refusing to take any business at less than 10¼ cents and up.

Exporters apparently took no interest in the market this week. One exporter wired a Tulsa representative asking for quotations on 41-43 water white kerosene and 58-60 U. S. Motor gasoline. The representative told the refiners what he wanted, got quotations from those who appeared interested, wired the prices in. No purchases were made.

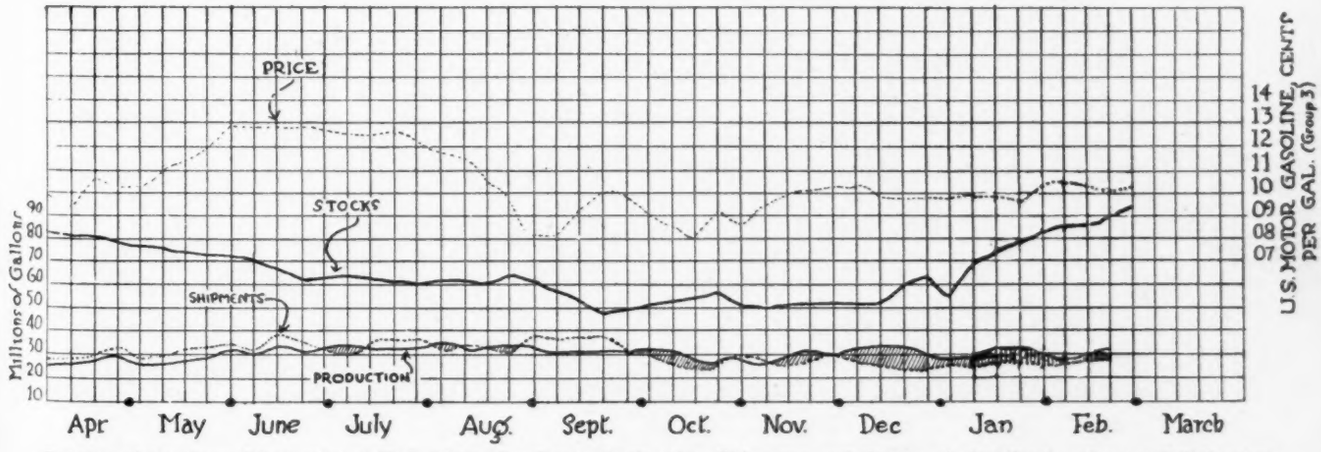
Several persons who heard of the request for quotations expressed the opinion that no exporter would be interested in kerosene at the present prices unless he had been caught short and had to cover in a hurry. And feelers already have been sent into the field with reference to U. S. Motor gasoline, with the result that prospective purchasers apparently disagree widely with refiners on what that commodity should bring for export.

Kerosene Is Strongest

The kerosene market has been the strongest spot in the whole list, despite the fact that material was offered more freely the latter part of the week in Oklahoma.

(Continued on Page 125)

Barometer of the Mid-Continent Gasoline Market



Relation of the Group Three price of U. S. Motor Gasoline to Production, Shipments and Stocks of Gasoline at the 124 Mid-Continent plants reporting their figures weekly to National Petroleum News.

JENKINS CRACKING PROCESS

PRODUCES QUALITY GASOLINE

Facts from performance

CRACKING LOSS

In checking the performance of the Jenkins Process you will find a cracking loss of 2 1/2%. This loss is the total fixed gas and soft carbon produced. The former can easily be used for fuel, and credited to the operation.

This low loss is the result of not over cracking the oil, which would cause, in addition to a higher loss, much inferior products.

GRAVER *Founded 1857* Corporation

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Mar. 8	Prices Mar. 1	Prices Feb. 22
52-54 Naphtha	11¾ -12	11½-12	11¾-12
54-56 Naphtha	12 -12¼	12 -12¼	12¼-12½
58-60 Gasoline	12¼-12¾	12½-12¾	12½-12¾
60-62 Straight-run gasoline	13½-14	13¾-14	13½-13¾
62-64 Straight-run gasoline	14 -14½	14 -14¼	14¼-14½
64-66 Straight-run gasoline	14½-15	14½-14¾	14¾-15¼
68-70 Straight-run gas. 350-360 E.P.	15½ 16	15½-16	15¾-16¼
68-70 Straight-run gas. 305-320 E.P.	19 -20	-20	-20
70-72 Straight-run gas. 300-305 E.P.	-21	-21	-21
OKLAHOMA			
48-50 450 E. P. naphtha	9⅛- 9⅜	9¼- 9⅜	9¼- 9½
50-52 450 E. P. naphtha	9⅛- 9⅜	9¼- 9⅜	9¼- 9½
56-58 450 E. P. gasoline	- 9½	9½- 9¾	- 9¾
56-58 U. S. Motor gasoline	9⅝- 9⅞	9¾- 9⅞	9¾-10
58-60 U. S. Motor 437 E. P.	-10	10 -10¼	10 -10¼
60-62 400 E. P. gasoline	11¼-11½	11½-11¾	11⅝ 12
64-66 390 E. P. gasoline	-12	12 -12¼	12 -12¼
64-66 375 E. P. gasoline	12¼-12½	12½ 12¾	12½-12¾
68-70 350-360 E. P. gasoline	13 -13¼	13¼-13½	13¼-13½
64-66 437 E. P. blend	9¾-10	-10	-10
KANSAS*			
58-60 U. S. Motor gasoline	-10½	-10½	10½-10½
60-62 400 E. P. gasoline	-12	12 -12¼	12 -12¼
64-66 375 E. P. gasoline	-13	-13	-13
*F. O. B. refinery, Kansas destination.			
NORTH TEXAS			
48-52 450 E. P. naphtha	9 - 9¼	9 - 9¼	- 9¼
56-58 450 E. P. gasoline	- 9¾	9¼- 9¾	9¾- 9½
58-60 450 E. P. gasoline	9½- 9⅝	9½- 9⅝	9½- 9⅝
56-58 U. S. Motor gasoline	- 9⅝	9½- 9¾	9½- 9¾
58-60 U. S. Motor gasoline	9¾-10	9¾-10	9¾-10
64-66 390 E. P. gasoline	12¾-13	12 -12¼	12¼-12½
64-66 375 E. P. gasoline	12¼-12½	12¼-12¾	12¾-13
68-70 350-360 E. P. gasoline	-13	-13	-13¼
NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	-10¼	10¼-10½	10 -10¼
ARKANSAS			
58-60 450 E. P. gasoline	9¾-10	9¾-10	9¾-10
58-60 U. S. Motor gasoline	-10¼	10¼-10½	-10
64-66 375 E. P. gasoline	12½-12¾	12¾-13¼	13 -13¼
CALIFORNIA			
54-56 U. S. Motor gasoline	-11	-11	-11
42-45 Engine distillate, 445-480 E.P.	8 - 9	8 - 9	8 - 9

Note: This is without the 2-cent state tax included in the price of California refiners for shipments within the state.

NEW ENGLAND
(F. O. B. Boston and Fall River)

U. S. Motor gasoline	13 -13½	13 -13¾	-13⅝

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F.)

OKLAHOMA			
Grade Double A	9½- 9¾	9½- 9¾	9¾-10
Grade A	9½- 9¾	9½- 9¾	-10
Grade Double B	8¾ - 9	8¾ - 9	- 9
Grade B	8¾ - 9	8¾ 9	- 9
Grade C	- 8¾	8¾- 9	8½- 8¾

NOTE—Specifications adopted by Ass'n of Nat. Gaso. Manufacturers
Grade Double A—80-87.9 gravity, 90% recovery, not over 375 E. P.
Grade A—72-79.9 gravity, 90% recovery, not over 375 E. P.
Grade Double B—84-92 gravity, 85% recovery, not over 375 E. P.
Grade B—76-83.9 gravity, 85% recovery, not over 375 E. P.
Grade C—80-90 gravity, 78% recovery, not over 375 E. P.

NORTH LOUISIANA			
Grade Double A	10½-10¾	10½-10¾	10½-10¾
Grade Double B	9½- 9¾	9½- 9¾	9½- 9¾
Grade C	- 9¼	- 9¼	- 9¼
F. O. B. Monroe District.			
NORTH TEXAS			
*Grade Double A	- 9¾	9¾-10	9¾-10
*Grade A	- 9¾	9¾-10	9¾-10
*Grade Double B	- 9	- 9	- 9½
*Grade B	- 9	- 9	- 9½
*Grade C	- 8¾	8¾- 9	8½- 8¾
*F. O. B. Breckenridge.			
CALIFORNIA			
73-78° 375 E. P.	15 -15½	15 -15½	15 -15½
PENNSYLVANIA			
68-70 Grav. 437 E. P.	12½-13	13 -13¾	13½-14
64-66 Grav. 437 E. P.	12½-13	13 -13¾	13½-14
60-62 Grav. 437 E. P.	12½-13	12¾-13¼	13 -13½
68-70 Grav. 420 E. P.	13¼-13½	13½-14	14 -14½

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosene	8½- 8¾	8½- 8¾	8¾- 9
46 Water White Kerosene	9¼- 9½	9¼- 9½	9½- 9¾
47 Water White Kerosene	10 -10¼	-10	10 -10¼
300 Burning Oil	- 8½	- 8½	- 8½
OKLAHOMA			
41-43 Water White Kerosene	6¾- 6⅞	6¾- 6⅞	6¾- 6⅞
42-44 Water White Kerosene	7⅛- 7¼	7 - 7¼	7 - 7¼
KANSAS			
41-43 w. w. kerosene	- 7⅛	- 7¼	7 - 7¼
42-44 w. w. kerosene	.....	- 7½	- 7½

NORTH TEXAS	Prices Mar. 8	Prices Mar. 1	Prices Feb. 22
41-43 Water White Kerosene	6⅞- 7	6¾- 6¾	6½- 6¾
42-44 Water White Kerosene	- 7½	- 7½	.....
NORTH LOUISIANA			
41-43 Water White Kerosene	- 7½	7¾- 7½	7¼- 7½
ARKANSAS			
41-43 Water White Kerosene	- 7½	7 - 7½	7 - 7½
CALIFORNIA			
40-42 Water White Kerosene	5 - 5½	5 - 5½	5 - 5½
NEW ENGLAND			
*40-43 Water White Kerosene	- 9½	.....	.....

NEUTRAL OIL

PENNSYLVANIA			
(Viscosity at 70° F.)			
220 Vis. No. 3 Assoc. Filt.	30	-29½	-29
200 Vis. No. 3 Assoc. Filt.	27¾-28	27 -27½	27 -28
180 Vis. No. 3 Assoc. Filt.	25½ 26	25 -25½	-25
150 Vis. No. 3 Assoc. Filt.	21½ 22½	21 -21½	21 -22
(Non-Viscous)			
34 Grav. 350-360 Flash	- 8½	8½- 8¾	8½- 8¾
36 Miners Neutrals 300-305 Flash	7¼- 7¾	- 7¾	- 7¾
OKLAHOMA			
(Viscosity at 100° F.)			
100 Vis. No. 2 color	7 - 7½	7 - 7½	7 - 7½
150 Vis. No. 3 color	10 -11	10 -11	10 -11
150 Vis. No. 4 color	9½- 9¾	- 9¾	- 9¾
180 Vis. No. 3 color	10 -10¾	10 -10¾	10 -10¾
180 Vis. No. 4 color	10½-11	10½-11	10½-11
180 Vis. No. 5 color	9 -10¾	9 -10¼	9 -10¾
200 Vis. No. 3 color	11 -12	11 -12	11 -12
200 Vis. No. 4 color	11¼-11½	-11½	-11½
200 Vis. No. 5 color	10 -11¼	10 -11¼	10 -11¼
220 Vis. No. 3 color	12¼-12¾	12½-12¾	12½-12¾
220 Vis. No. 4 color	13 -13¼	13 -13¼	13 -13¼
220 Vis. No. 5 color	12½-12¾	-12¾	-12¾
240 Vis. No. 3 color	14¼ 15	14¼-15	14¼-15
240 Vis. No. 4 color	14¼ 14½	-14½	-14½
240 Vis. No. 5 color	13¾ 14	-14	-14
280 Vis. No. 3 color	15¼-17	15¼-17	15¼-17
280 Vis. No. 4 color	16¼-16½	-16½	-16½
280 Vis. No. 5 color	15¾-16	-16	-16
300 Vis. No. 5-6 color	17 -18½	17 -18½	17 -18½
GULF COASTAL			
(Viscosity at 100°F; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	7½- 8	7½- 8	7½- 8
200 Vis. No. 3 Color Unfilt. Pale	11½-12	11½-12	11½-12
300 Vis. No. 3 Color Unfilt. Pale	13½-14	13½-14	13½-14
500 Vis. No. 3½ Color Unfilt. Pale	15½-16	15½-16	15½-16
750 Vis. No. 4 Color Unfilt. Pale	19 -19½	19½-20½	19½-20½
200 Vis. No. 5½ Color Red Oil	9½ 10	10 -10½	10 -10½
300 Vis. No. 5½ Color Red Oil	11½-12	12 -12½	12 -12½
500 Vis. No. 6 Color Red Oil	13 -13½	13½-14	13½-14
750 Vis. No. 6 Color Red Oil	18 -18½	18 -18½	18 -18½
CALIFORNIA			
(Viscosity at 100° F.)			
100 Vis. No. 2 color	11 -11½	11 -11½	11 -11½
100 Vis. No. 3 color	8½- 9	8½- 9	8½- 9
200 Vis. No. 3 color	13½-14	13½-14	13½-14
300 Vis. No. 3 color	15 -15½	15 -15½	15 -15½
450 Vis No. 3½ color	18 -18½	18 -18½	18 -18½
550 Vis. No. 3 color	20 -21	20 -21	20 -21
600 Vis. No. 3½ color	21 -22	21 -22	21 -22
100 Vis. No. 5 color	7 - 7½	7 - 7½	7 - 7½
200 Vis. No. 5 color	12 -12½	12 -12½	12 -12½
300 Vis. No. 5 color	13 -13½	13 -13½	13 -13½
400 Vis. No. 5 color	15 -16	15 -16	15 -16
500 Vis. No. 5 color	16 -17	16 -17	16 -17
600 Vis. No. 6 color	17 -18	17 -18	17 -18
700 Vis. No. 7 color	18 -19	18 -19	18 -19

CYLINDER STOCKS

OKLAHOMA			
190-210 Vis. at 210° Bright Stock	31 -35	31 -35	31 -35
150-160 Vis. at 210° Bright Stock	28 -31	28 -31	28 -31
600 E Stock, 140-150 Vis. @ 210°	18 -20	18 -20	18 -20
600 Steam Refined Olive Green	8½-11½	9 -11½	9 -11½
600 Steam Refined Dark Green	6½- 8	6¾- 8	6½- 8
Black Oil	- 5	- 5	- 5
PENNSYLVANIA			
(1-inch Immersion Test)			
600 Steam Refined	16 -17	16½-19	18 -19
635 Steam Refined	20 -21	21 -21½	21 -22
650 Steam Refined	22 -23	23 -24	22½-23½
600 Flash	24 -25	26 -27	26 -27
625 Flash Steam Refined	-35	-36	-36
600 Warren E	21½-22	21½-22½	21½-22½
600 Oil City E	20½-21	-20½	-20½
600 Filtered D	26½-27½	27 -28	27 -28
Cold Test Stocks (bright filtered)	37½-38½	38½-39	38½-39
Cold Test Stock (dark filtered)	35½-36½	36½-37	36½-37
Black Oil	8 - 8½	- 8	- 8

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

*Only one refiner quoting.

Available for
IMMEDIATE SHIPMENT

450 Bright Stock

Sharples Process

100% Pennsylvania Crude

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Specifications [1046]

Flash: 450
Fire: 510
Viscosity at 210: 80-85
Gravity: 28
Cold Test: 25-30
Color: No. 7

This stock can be delivered straight or blended to your specifications with 100% Pennsylvania Crude Neutrals.

For shipment in tank cars, compartment tank cars, barrels or drums. For quotation write to

The FREEDOM OIL Works Company, Freedom, Pa.

Refiners of Pennsylvania Grade Crude for 47 years.

Refineries at Freedom and Coraopolis

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom Filtered Neutrals
Freedom 300 Mineral Seal Oil
made to Railroad Specifications
Freedom Filtered Burning Oils

Refinery Markets on Wax and Heavy Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

WAX

PENNSYLVANIA	Prices Mar. 8	Prices Mar. 1	Prices Feb. 22
(Per Pound, New York			
122-124 White Crude Scale..	- 5¼	- 5⅜	- 5⅜
124-126 White Crude Scale..	- 5⅜	- 5⅝	- 5⅝
OKLAHOMA (Per Pound, Group 3)			
124-126 White Crude Scale..	- 4⅞	4⅞- 5	5 - 5⅛
CALIFORNIA			
White Crude Scale.....	6 - 6¼	6 - 6¼	6 - 6¼

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	6¼- 6¾	6¼- 6⅛	6 - 6¼
30-34 Fuel Oil.....	5¾- 6	5¾- 5⅞	5¾- 5⅞
28-30 Fuel Oil.....	5¾- 5⅞	5¾- 5⅞	5¾- 5⅞
OKLAHOMA			
38-40 Straw distillate.....	4 - 4¼	4 - 4⅛	4 - 4⅛
36-38 Straw distillate.....	- 3⅞	3¾- 3⅞	3¾- 3⅞
32-36 Gas oil (Gal.).....	3¾- 3⅞	- 3¾	- 3¾
26-30 Fuel oil (Bbl.).....	1.30 -1.40	1.30 -1.40	1.27½-1.30
22-26 Fuel Oil (Bbl.).....	1.17½-1.22½	1.17½-1.22½	1.17½-1.22½
18-22 Fuel oil (Bbl.).....	1.15 -1.17½	1.15 -1.17½	1.15 -1.17½
KANSAS*			
38-40 Light straw distillate..	4¼- 4⅜	4⅛- 4⅜	4⅛- 4⅜
36-38 Light straw distillate..	4 - 4⅛	4 - 4⅛	4 - 4⅛
32-36 gas oil.....	3¾- 4	3¾- 4	3¾- 4
18-22 Fuel oil.....	1.20 -1.30	1.20 -1.30	1.17½-1.22½
24-26 Fuel oil.....	1.30 -1.40	1.30 -1.40	1.22½-1.30

*F. O. B. refinery Kansas destination.

NORTH TEXAS	Prices Mar. 8	Prices Mar. 1	Prices Feb. 22
36-38 Straw Distillate.....	3¾- 4	3¼- 3⅞	3¾- 3⅞
32-36 Gas Oil (Gal.).....	- 3¾	3¾- 3¾	3¼- 3¾
24-26 Fuel per (Bbl).....	1.35 -1.40	1.30 -1.35	1.25 -1.30
GULF COASTAL			
Fuel.....	1.55 -1.65	1.55 -1.65	1.55 -1.65
Gas Oil.....	- 5¼	- 5¼	- 5¼
NORTH LOUISIANA			
32-36 Light Gas Oil (Gal.)...	3¾- 4	3¾- 4	3¾- 4
16-20 Fuel Oil (Bbl.).....	1.17½-1.20	1.15 -1.20	1.15 -1.20
ARKANSAS			
32-36 Gas Oil.....	3¾- 4	3¾- 4	3¾- 4
Road oil.....		-1.26	-1.26
Smackover Crude Fuel.....	-1.15	1.15 -1.25	1.15-1.25
CALIFORNIA*			
14-18 Fuel Oil (Bbl.).....	1.00	1.00	1.00
14-18 Bunker Oil (Bbl.).....	1.00	1.00	1.00
24-30 Gas Oil (Bbl.).....	1.15	1.15	1.15
27 + Diesel Oil (Bbl.).....	1.15	1.15	1.15

*(San Joaquin Valley, San Francisco 4c per bbl. more.)

NEW ENGLAND (F. O. B. Boston and Fall River)			
*30-32 gas oil (gal.).....	- 5¼	- 5¼	- 5¼
Fuel Oil (Bunker C) bbl.....	-1.80	-1.82½	-1.83

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

*Only one refiner quoting.

(Continued from Page 121)

Kerosene in Texas is extremely scarce. A Tulsa marketer who had a considerable amount bought for over the month, sold this week for resale at 6⅞ cents per gallon, went to the refiners' meeting and returned Friday "cussing" himself for not holding to his purchase a little longer. He had one ray of sunshine, however, for he had taken a nice profit when he sold. Sales as high as 7¼ cents were being reported in spots at the end of this week.

In Kansas, Arkansas and Louisiana kerosene was almost as scarce as in Texas, and the prices held accordingly.

Higher gravity fuels tightened again, and were obtainable in only small quantities and in only a few places. In Oklahoma the shrewdest marketers reported that they were unable to get 26-30 gravity fuel oil for less than $1.35 a barrel, and the higher gravity stuff was still dearer.

The Kansas fuel oil situation was practically unchanged, with straight reduced 24-26 gravity oil bringing a premium in many sales. Two or three refiners who make a straight reduced product said they had sold to other refiners who had been unable to ship their own product on certain contracts where the fuel was to be used for Diesel engines.

The Denver City railroad was in the north Texas market for its monthly purchase of fuel oil, and prices strengthened accordingly. The railroad is said to have bought at least a part of its needs, paying around $1.35 to $1.37½ per barrel.

Another factor which is influencing the north Texas fuel market, according to one refiner, is the scarcity of fuel cars. Fuel is available, he said, but refiners can't get the cars to move the stuff.

Gossip has been going around the field lately that three or four companies are trying to "corner" the gas oil market. Just how true this rumor is, cannot be ascertained at present, but it is a fact that the gas oil is being bought almost as fast as it bobs up on the market Prices are steady to strong.

Texas Refiners Blending

The less said about the straight run gasoline market the better, perhaps. While the prices were held fairly well in line, 60-62, 400 end point grade proved to be the exception, and that despite the fact that a quantity of this grade gasoline was purchased recently in Oklahoma and Kansas for export. Sales at 11¼ to 12 cents became few and far between early in the week, and by Friday, some stuff was moving as low as 11¼ cents, and the highest price was 11½ cents.

Gasolines in Texas are of two kinds—straight run, good material, and blends, some good, the remainder varying. Even brokers and marketers frankly say that good straightrun 58-60 U. S. Motor gasoline isn't free at Texas. They can get all the blends they desire, however, the stuff being made up from the heavy ends left after 64-66, 375 e. p. gasoline for export has been cut.

Several marketers report that they have tried to handle some of the cheaper gasoline offered in Texas, and have gotten into trouble with it. There's a chance of it being accepted, they say, but chances are about equal that it will be rejected.

Arkansas and Louisiana refiners make gasoline and ship it, as one refiner expressed the situation this week. Consequenty, the market in that area has had its ups and downs this week. In Kansas the market has held with movement slow.

All prices and market information printed herein have been gathered by the staff of National Petroleum News from reliable sources and so far as can be ascertained thoroughly represent the going market as defined for each product on the date given for those particular prices. Both buyers and sellers have been checked in the gathering of this information and actual sales studied.

These prices and this information are subject at all times to correction for errors. Anyone having knowledge of any facts which would indicate anything different from the information which is given, is especially urged to send in those facts to the head office of National Petroleum News at once, or take them up with the nearest representative. All such facts will be promptly and thoroughly investigated.

The staff of National Petroleum News is cognizant of the fact that this market information has come to have a high standing in the industry. It wants to not only maintain that standing, but to improve it and to that end, invites the co-operation of the entire oil industry.

Refiners Try to Hold Gasoline Around 10 Cents, Group 3

CHICAGO, March 6

GASOLINE appeared to reach a dead center at 10 cents a gallon, Group 3, and stood at that price almost all this week. In the Chicago resale market little life was manifested in the spot market. Carload marketers, with few exceptions, were doing but little business in U. S. Motor gasoline because they could not buy in Oklahoma under a dime and found it difficult to sell for any more. However, on Saturday some cheaper stuff was reported in Group 3.

Sales of single cars here and there were recorded on the book of carload marketers and refinery representatives also at 10¼ cents but in almost every case the transaction did not stand wholly on the question of price. Jobbers with regular sources of supply are seldom disposed to bear the market on a small order, so if their regular refiner or marketer is quoting Motor firm at 10¼ cents the transaction is consummated without argument. The prevailing open quotation is 10 cents, however, and 10¼ cents is mostly an arbitrary price.

There are some sources of supply out of Group 3 in territories where the freight differential is sufficient to allow a little profit to a marketer who buys at 10 cents F.O.B. plant and sells at 10 cents F.O.B. the Group Some business is being done by Chicago resale agents on this basis, but it too is light along with spot price movement in general. Such deals are so peculiar that they do not always indicate a basic weakness in the Group 3 price.

Optimistic About Future

A great deal of optimism is expressed here in regard to future business. Persons of a hopeful turn of mind are prone to turn a credulous ear to the "Loregicians" who have ideas to express about the coming of an early spring. The second day of February was dark and gloomy. The fabulous groundhog did not see his shadow which in some circles is a sure sign of an early spring. On top of that, "March came in like a lion" which, in a certain school of thought, means "it will go out like a lamb".

This week would rightly be called fair in Standard Oil Co. of Indiana territory. Most of the precipitation in the general Chicago forecast district was east of the line that separates Illinois and Indiana. The weather was cool, in fact there were some sub-zero temperatures in the territory but the sun shone and the roads were firm and jobber gallonage held up well throughout the region. Although March started out severe it augurs better than February during which Chicago had only 11 days when the sun shone and 17 days of snow.

The cold snap this week did its share to firm the market for domestic fuel. Distillate of 38-40 gravity enjoyed a fair demand at 4⅛ to 4⅜ cents. Gas oil firmed during the latter part of the week to 3¾ to 4 cents and was the feature of the market.

There were several reasons for the strength of gas oil. It was suggested by some that refiners had adopted a policy to store their gas oil to crack in the spring. Refiners deny this is their policy. One large Oklahoma refiner actually is buying gas oil to fill his contracts because his plant has curtailed its crude runs. Moreover, several small gas companies are reported to be in the market for gas oil.

Kerosene has held its own in the market remarkably well. The price of roughly 7 cents today is higher than it has been since 1920 and twice as high as it was in the lowest subsequent price valley. Currently 41-43 is easily moved at 6¾ to 7 cents and 42-44 is scarce at 7¼ to 7½ cents. Persons familiar with the market are not predicting any lower prices for kerosene in the spring for they say the refinery situation is not likely to change much and tractors are already being brought into use in the Ohio river valley.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Atlantic Refining—T. w. and s. s. prices of gasoline at Erie, Pa. in past three issues of National Petroleum News should have been shown as 15 cents and 20 cents respectively, including 2 cent road tax, which prices went into effect Jan. 12.

Kerosene Changes

Atlantic Refining—T. w. price of kerosene at Erie is 14 cents.

Correction

In Kansas refinery markets in March 3 issue of National Petroleum News, prices on 18-22 fuel oil in the March 1 column should have been $1.20 to $1.30 and 24-26 fuel oil should have been $1.30 to $1.40.

In north Texas, 68-70, 350 to 360 e.p. gasoline should have been 13 cents flat in the March 1 column.

Penn Market Is Steady After Crude Cut

CLEVELAND, March 8. — The western Pennsylvania refinery market today withstood a surprise cut in price of Pennsylvania grade crude oil with barely a ripple. Prices, with the exception of cylinder stocks, held firmly at levels which prevailed over most of last week. Cylinder stocks which are dull, are quoted 1 cent lower than a week ago with some shading being done where orders booked earlier in the year have been worked off or are being worked off rapidly.

Neutrals are the strongest products on the Pennsylvania list. There is an actual scarcity of these motor oil constituents. Several plants have sold up their output for some time ahead and other manufacturers have only small amounts to offer for prompt shipment.

A little more kerosene seems available for spot shipment but it is quickly taken up. A few refiners are willing to sell 45 water white at 8½ cents but the larger plants are demanding 8¾ cents and report they have no trouble in getting that price.

Demand for 36-40 red fuel oil, which has a zero cold test, has been good and in part of the Pennsylvania this oil has been bringing ⅛ cent per gallon more than the straw color oil of the same gravity. The straw oil usually sells for ⅛ or ¼ cent more than the red because it is used as a charging oil for cracking stills. With gasoline prices at their present level some cracking plant owners are not pushing their plants hard and therefore are not in the market for a large quantity of charging stock.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price, with tax added in and the service station or retail price of gasoline as quoted by the Standard Oil Companies in their various marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers.

These Prices in Effect March 8, 1926

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Atlantic City, N. J.	16	0	16	*	15
Newark, N. J.	16	0	16	18	15
Annapolis, Md.	16	2	18	*	15
Baltimore, Md.	16	2	18	21	15
Cumberland, Md.	16	2	18	21	15
Washington, D. C.	16	2	18	21	15
Danville, Va.	17	3	20	*	15
Norfolk, Va.	17	3	20	23	15
Richmond, Va.	17	3	20	23	15
Roanoke, Va.	17	3	20	23	15
Petersburg, Va.	17	3	20	*	15
Williamsburg, Va.	17	3	20	*	15
Charleston, W. Va.	16.5	3½	20	23	15
Clarksburg, W. Va.	16.5	3½	20	23	15
Keyser, W. Va.	16.5	3½	20	*	15
Parkersburg, W. Va.	16.5	3½	20	23	15
Wheeling, W. Va.	16.5	3½	20	23	15
Charlotte, N. C.	17	4	21	24	15
Hickory, N. C.	17	4	21	*	15
High Point, N. C.	17	4	21	*	15
Mt. Airy, N. C.	17	4	21	*	15
Salisbury, N. C.	17	4	21	*	15
Charleston, S. C.	17	5	22	25	15
Columbia, S. C.	17	5	22	25	15

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

*New York City	18	0	18	22	16
Albany, N. Y.	†18	0	†18	†20	16
Buffalo, N. Y.	17	0	17	20	16
Rochester, N. Y.	†17	0	†17	†21	14
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	21	16
Augusta, Me.	18	3	21	24	16
Manchester, N. H.	18	2	20	24	16
Burlington, Vt.	18	2	20	22	16

*In steel barrels.

†At Rochester and Albany, Standard sells two grades of gasoline, the above price applying to its Socony grade, and another grade being sold 2c below this price.

ATLANTIC REFINING

Pittsburgh, Pa.	17	0	17	*22	16
Philadelphia, Pa.	17	0	17	*22	16
Allentown, Pa.	17	0	17	*22	16
Erie, Pa.	15	0	15	*20	14
Scranton, Pa.	17	0	17	*22	16
Altoona, Pa.	17	0	17	*22	16
Dover, Del.	17	2	19	22	16
Wilmington, Del.	17	2	19	22	16
Providence, R. I.	18	1	19	22	16
Springfield, Mass.	18	0	18	20	16
Worcester, Mass.	18	0	18	20	16
Hartford, Conn.	18	2	20	23	15
New Haven, Conn.	18	2	20	23	16
Boston, Mass.	18	0	18	21	16

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	17	5	22	25	16
Louisville, Ky.	18	5	23	26	15
Covington, Ky.	18	5	23	26	16
Clarksdale, Miss.	17	3	20	23	14.5
Jackson, Miss.	17	3	20	23	13.5
Natchez, Miss.	16.5	3	19.5	22.5	14
Vicksburg, Miss.	16.5	3	19.5	22.5	14
Birmingham, Ala.	18	2	20	23	16.5
Mobile, Ala.	17	2	19	22	15
Montgomery, Ala*	19	2	21	24	17.5
Atlanta, Ga.	†19	3½	23	26	17
Augusta, Ga.	†19	3½	23	26	16.5
Macon, Ga.	†19	3½	23	26	17
Savannah, Ga.	†16	3½	20	23	15
Jacksonville, Fla.	17	4	21	24	15
Miami, Fla.	19	4	23	26	16.5
Tampa, Fla.	17	4	21	24	15
Pensacola, Fla.	17	4	21	24	15.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

S. O. INDIANA

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Chicago, Ill.	†17	0	†17	19	12
Decatur, Ill.	17.2	0	17.2	19.2	12.5
E. St. Louis, Ill.	16.1	0	16.1	18.35	11.6
Joliet, Ill.	17.4	0	17.4	19.4	12.7
Peoria, Ill.	17.2	0	17.2	19.2	12.5
Quincy, Ill.	17.2	0	17.2	19.2	12.3
Indianapolis, Ind.	17.2	3	20.2	22.2	12.7
Evansville, Ind.	17	3	20	22	12.5
South Bend, Ind.	17.4	3	20.4	22.4	12.9
Detroit, Mich.	17.8	2	19.8	21.8	13.2
Grand Rapids, Mich.	17.7	2	19.7	21.7	13.1
Saginaw, Mich.	17.9	2	19.9	21.9	13.3
Madison, Wis.	17.3	2	19.3	21.3	12.5
Milwaukee, Wis.	17.1	2	19.1	21.1	12.3
La Crosse, Wis.	18.2	2	20.2	22.2	13.4
Minneapolis, Minn.	18.2	2	20.2	22.2	13.6
Duluth, Minn.	18.5	2	20.5	22.5	13.6
Mankato, Minn.	18.1	2	20.1	22.1	13.4
Des Moines, Iowa	17.5	2	19.5	21.5	12.9
Davenport, Iowa	17.5	2	19.5	21.5	12.9
Sioux City, Iowa	17	2	19	21	12.5
Mason City, Ia.	17.5	2	19.5	21.5	12.9
St. Louis, Mo.	**16.6	2	18.6	20.9	12
Kansas City, Mo.	††17.9	2	19.9	21.9	11.3
St. Joseph, Mo.	**17	2	19	21	11.9
Fargo, N. D.	19.9	1	20.9	22.9	15.6
Grand Forks, N. D.	20.2	1	21.2	23.2	15.9
Minot, N. D.	19.9	1	20.9	22.9	15.6
Pierre, S. D.	15	3	18	*	14.1
Huron, S. D.	16	3	19	21	14.1
Wichita, Kans.	16.3	2	18.3	21.3	11.8
Bartlesville, Okla.	14.4	3	17.4	19.4	10.9

†Dumps of 100 or more gallons at 16c per gallon.
*S. O. Indiana does not operate station.
**Includes city tax of ½c.
††Includes city tax of 1c.

S. O. NEBRASKA

Crawford, Neb.	18	2	20	*	13.25
Omaha, Neb.	16.25	2	18.25	20.25	12.5
McCook	18.75	2	20.75	22.75	14
Norfolk	17.75	2	19.75	21.75	13
North Platte	18.75	2	20.75	22.75	13.75
Scottsbluff	18.25	2	20.25	22.25	13.25

*Standard has no service station here.

CONTINENTAL OIL

Denver, Colo.	18	2	20	20	15.5
Pueblo, Colo.	17	2	19	19	15.5
Casper, Wyo.	18	2½	20.5	22.5	14
Cheyenne, Wyo.	19	2½	21.5	23.5	15.5
Butte, Mont.	20	2	22	22	17
Helena, Mont.	22	2	24	26	18
Salt Lake City, Utah.	20	3½	23.5	25.5	18
Boise, Ida.	22	3	25	27	20
Albuquerque, N.M.	21.5	3	24.5	27.5	17.5

S O. CALIFORNIA

Phoenix, Ariz.	20	3	23	26	21.5
Los Angeles, Cal.	12.5	2	14.5	18.5	15.5
Fresno, Cal.	14.5	2	16.5	20.5	17.5
San Francisco, Cal.	14	2	16	20	15.5
Reno, Nev.	17.5	4	21.5	25.5	19
Portland, Ore.	14	3	17	21	16.5
Seattle, Wash.	14	2	16	20	16.5
Spokane, Wash.	18	2	20	24	20.5
Tacoma, Wash.	14	2	16	20	16.5

S. O. LOUISIANA

Little Rock, Ark.	14.5	4	18.5	21.5	14.5
Alexandria, La.	14.5	2	16.5	19.5	14.5
Baton Rouge, La.	13.5	2	15.5	18.5	13
Lake Charles, La.	15	2	17	20	14.5
New Orleans, La.	*15	2	17	20	13.5
Shreveport, La.	13.5	2	15.5	18.5	13.5
Lafayette, La.	15.5	2	17.5	19.5	14
Bristol, Tenn.	16.5	3	19.5	22.5	15
Chattanooga, Tenn.	15.5	3	18.5	21.5	15
Knoxville, Tenn.	16	3	19	22	15.5
Nashville, Tenn.	15.5	3	18.5	21.5	15
Memphis, Tenn.	15	3	18	21	14.5

*Includes 1c city tax on gasoline and kerosene.

S. O. OHIO

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
All Ohio points	19	2	21	23	15

MAGNOLIA PETROLEUM

Muskogee, Okla.	17	3	20	23	10
Oklahoma City	17	3	20	23	12
Tulsa, Okla.	13	3	†16	19	12
Fort Smith, Ark.	15	4	19	22	14.5
Little Rock, Ark.	15	4	19	22	14.5
Texarkana, Ark*	17	4	21	24	13
Dallas, Tex.	15	1	16	20	12
El Paso, Tex.	18	1	19	20	13
Fort Worth, Tex.	14	1	15	17	11
Houston, Tex.	16	1	17	20	12
San Antonio, Tex.	15	1	16	17	11

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

†16c to regular power trade, 18c to all other tank wagon consumers.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline)

	Oleum Spirits	V.M.&P. Naphtha	Cleaners Naphtha
Chicago	19	21	21
Detroit	20.2	22.7	22.7
Kansas City	19.2	21.2	21.2
Milwaukee	19.2	23.7*	23.7*
Minneapolis	20.5	25*	25*
St. Louis	18.4	20.9	22.2
New York	.....	18	.....

*Including state tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Toronto	24.5	3	27.5	31	20
Ottawa	25.5	3	28.5	32	21
Cochrane	29.5	3	32.5	36	24.5
Ft. William	28.5	3	31.5	35	22.5

MANITOBA

Winnipeg	28.5	3	31.5	35	22.5

SASKATCHEWAN

Regina	31.5	0	31.5	35	25.5

ALBERTA

Edmonton	32.5	2	34.5	38	27.5
Calgary	30.5	2	32.5	36	26.5

BRITISH COLUMBIA

Vancouver	22	3	25	29	23

QUEBEC

Montreal	24.5	3	27.5	31	20
Quebec City	26.5	3	29.5	33	22
Three Rivers	26.5	3	29.5	33	22

NEW BRUNSWICK

St. John	27.5	0	27.5	32	25
Moncton	27.5	0	27.5	32	25

NOVA SCOTIA

Halifax	27.5	3	30.5	35	23
Sydney	29.5	3	32.5	33	25

PRINCE EDWARD ISLAND

Charlottetown	27.5	2	29.5	34	23

Note: In districts surrounding these points 1c additional is added to city price.

Complete Export Markets

New York | Gulf Coast | California

Export Demand for Light Oils Fails To Live Up to Indications

Special Correspondent
NEW YORK, March 8

AT the start of the week all indications pointed towards a good export demand for gasoline and kerosene. Inquiries from England and Franee were numerous, but the majority of these were withdrawn from the market as a result of the downward tendency in the Gulf section. Domestic demand is steadily gaining.

Kerosene was a shade softer at New York owing to the influx of coal and much improved weather conditions. Pennsylvania cylinder stocks were weak and could probably have been shaded ½ cent on a bid. Cased kerosene was again marked up 5 cents a case in the Gulf section. The waxes were neglected and weaker.

Export Gasoline—New York

Export demand lagged. There was an inquiry in the market for 45,000 barrels of U. S. Motor, 64-66 gravity and prime and water white kerosene for March-April shipment to France, early in the week, but this was withdrawn. U. S. Motor was firm at 12½ cents a gallon at New York harbor refineries while at Philadelphia the price was 12¾ cents a gallon. An inquiry was received from the United Kingdom for 40,000 barrels of U. S. Motor and 64-66 gravity gasoline but this failed to materialize. The demand for cased gasoline has improved a trifle but is still confined to orders for 5000 cases and less, for immediate shipment to South America and the West Coast of Africa.

Export Gasoline—Gulf Ports

During the early part of the week, a leading refiner reduced the price of 64-66 gravity gasoline ¼ cent a gallon, to 14¾ cents, and this action was held largely responsible for the slump in export demand. On Monday a large British buyer was inquiring for 40,000 barrels of U. S. Motor, 64-66 gravity gasoline and prime and water white kerosene for March shipment from the Gulf while a French buyer was negotiating for a cargo of 35,000 barrels of U. S. Motor and 64-66 gravity for nearby shipment but neither of these materialized. One of the leading Independents closed an order for 14,000 barrels of 60-62-400 end point gasoline at 13¾ cents a gallon for March shipment to the Continent, presumably to the Netherlands. As the week closed, U. S. Motor was freely offered at 11½ cents and 64-66 gravity at 14¾ cents, but buyers' ideas were about ½ cent below these levels.

Cased gasoline was also quiet, with U. S. Motor in cargo lots held at $2.25 while 64-66 gravity was steady at $2.40 a case. There was an order from South America, presumably Buenos Aires for 15,000 cases of Motor and 64-66 gravity for March clearance which was booked by a large Independent. Another factor was working on an inquiry from the Far East for 35,000 cases of Motor and 64-66 gravity for March-April shipment.

Domestic Gasoline—New York

Demand for U. S. Motor gasoline has shown the seasonal improvement. Jobbers are anxious to lay in their spring supplies but are finding it increasingly difficult to locate refiners willing to sell beyond March. U. S. Motor is held at 11¼ cents a gallon at the refineries and 13½ cents a gallon, in tank cars delivered to the trade. There have been persistent rumors current of an impending advance in the tank wagon market. California gasoline, laid down at New York, is quoted at 12½ cents a gallon.

Domestic Gasoline — Gulf Ports

U. S. Motor gasoline, in tank cars delivered to the domestic trade was held at 12¾ cents a gallon, at 11¾ cents at the refineries. Demand is steadily gaining and refiners are optimistic regardless of the slump in export buying. The trade is looking for higher tank wagon prices, soon. Most of the jobbers are inquiring for larger quantities although many have already covered their spring needs.

Export Kerosene—New York

Water white was easier and local refiners, although asking 10 cents, are reported willing to sell a trifle below this on a firm bid while prime white is now quite generally quoted at 9 cents a gallon, refinery against 9¼ cents a week ago. The demand from abroad is less spirited. Foreign buyers have apparently enough on hand to take care of their requirements for the next few weeks and are showing little or no interest. There was an inquiry from China, for 35,000 cases of water and prime white kerosene for March shipment but this did not materialize.

Export Kerosene—Gulf Ports

As the week closed, water white ranged from 8½ to 8¾ cents and prime 7½ to 7¾ cents a gallon, with the majority asking 8½ and 7½ cents respectively. The export demand was very disappointing. Continental buyers appear disinterested. There has been a slightly better movement in cased kerosene and both prime and water white were marked up 5 cents each. The former is now quoted at $1.75 a case and the latter at $1.85 a case, in cargo lots. An inquiry from the Near East for 20.000 cases of prime and water failed to materialize, and the movement was mainly against old contracts.

Domestic Kerosene

Water white at New York harbor refineries was held at 10 cents a gallon, while in tank cars delivered to the trade the asking price was 11 cents a gallon. Prime white in tank cars delivered to the domestic trade was held at 10 cents a gallon. Jobbing demand is less spirited, reflecting the more clement weather conditions. There has been a heavy influx of anthracite coal which has also tended to reduce the need for kerosene.

Gas Oil—New York

Business in gas oil was slightly more spirited than during the previous week. For 36-40 the asking price is 6 cents while 28-34 is 5½ cents. Stocks are fairly heavy and while the former is ¼ cent a gallon off, consumption is large and refiners expect to crack large quantities soon. No export buying worth mentioning. Europeans are purchasing large quantities of Galician oil which is underselling American oil.

Gas Oil—Gulf Ports

Prices were quoted on a rather wide range. Transparent, 26-28 was offered from 4¾ to 5⅛ cents while dark 32 plus was quoted from 4⅝ to 5 cents a gallon. Export business was light. There was an inquiry for 30,000 barrels for March-April shipment to the Continent, probably France, but this fell through. Stocks are large, but refiners are not inclined to press sales, and are fairly confident of the future, counting on cracking for gasoline soon, regardless of the easier tendency in the latter.

Waxes—New York

All grades of paraffin waxes continued dull and a trifle easier. Foreign buyers are finding it cheaper to purchase Gali-

cian waxes which are being consumed in large quantities throughout Europe. Foreign buyers are bidding considerably below refiner' ideas, and local observers say there is no sign of a revival of export buying. Domestic consumers are also purchasing hand-to-mouth. White crude scale 122-124 A. M. P. is still held at 5¼ cents while yellow crude scale is held at 5⅛ cents for 124-126 A. M. P. Semi refined 122-124 A. M. P. is held at 5½ cents a pound. Fully refined grades were quoted on a basis of 6 cents for 120-122 A. M. P.

Waxes—Gulf Ports

Dullness also permeated this market throughout the week. Export demand was much below expectations while domestic demand is still lagging. White crude scale was held at 5¼ cents for 124-126 A.m.p. while semi-refined 124-126 A.m.p. was quoted at 5⅜ cents a pound. Fully refined 125-127 A.m.p. was held at 5.90 cents a pound; 128-130 at 6 cents; 133-135 A.m.p. at 6⅜ cents and 135-137 A.m.p. at 6¾ cents a pound.

Bunker Oil—New York

Demand for grade C bunker oil was a trifle lighter. There was little or no export interest shown in this oil all week, and the price was $1.75 a barrel at the refineries and $1.81½ a barrel f.o.s. New York harbor. Diesel oil was dull but steady with all of the leading refiners asking $2.30 a barrel at the refineries. Export business was very sluggish. Deliveries were mainly against old contracts.

Bunker Oil—Gulf Ports

Heavy Mexican crude oil was a shade firmer, and bulk, cargoes at Tampico were quoted at from $1.15 to $1.18 a barrel, taxes to be added. No sales were reported but buying interest is keener. Grade C bunker oil cargoes at Tampico was held at $1.45 a barrel taxes included, while at New Orleans the price was $1.50 a barrel. For bunkering purposes the New Orleans price was $1.60 a barrel f.o.b. Little or no export interest was shown.

Lubricants—New York

The market was easier, and while no actual reductions were announced by the leading refiners, prices in many instances could have been shaded a little on a firm bid. European buyers are showing little more than a passing interest, being able to lay Russian red and pale oils down at a much lower figure. Pennsylvania 600 s.r. cylinder stock, in barrels, New York, which was previously quoted at 25 to 26 cents a gallon could have been had at 24 cents on a bid. The paraffin oils were neglected.

Petrolatums

Snow white is in routine demand. Export buying is slightly better than a week ago while domestic demand is mainly for nearby needs. The price is steady at 11 to 11½ cents a pound. Dark green is in slightly better demand. Medicinal oils are quiet and unchanged.

New York Export Market

Prices below are an index to the export markets as of the dates given. In many cases they are actual sales prices. So many factors enter into the price in export transactions that an actual market price governing the bulk of transactions cannot be given.

GASOLINE	Mar. 8	Mar. 1
U. S. Motor, Tank cars Ref....	12½	12½-12¾
U. S. Motor cases.....	28.15	-28.15
California grade U. S. Motor F. O B. N. Y. Bulk.....	12½	-12½
KEROSENE		
41-43-150 W. W. Tank cars Ref.	10	-10
41-43-150 W. W. Cases.....	19.90	-19.90
42-44-110 S. W. Cases.....	18.40	-18.40
GAS OIL		
36-40, Bulk Refinery.....	-06	-06
28-34, Bulk Ref	-05½	-05½
MEXICAN BUNKER OIL		
Grade C, f. o. b- ref. . Bulk....	1.75	-1.75
Diesel Oil f. o. b. ref.. Bulk...	2.30	-2.30

LUBRICATING OILS

The following prices are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (bbls.) 1 inch Immersion Test; All Penna. Products		
Filtered D 600.....	32	-32
Filtered E 600.....	30	-30
Unfiltered 600 s. r.....	24-25	-25
Unfiltered 650 s. r.....	30	-30
600 flash s. r.....	32	-32
630 Flash.....	42	-42

RED PARAFFIN (bbls.) (Viscosity at 70)		
300 vis.....No. 5 color	21½	-21½
250 vis.....No. 5 color	20½	-20½
High Viscosity.....No. 5 color	26	-26

Neutral Oils (bbls.) (Viscosity at 70)		
200 vis. at F. Pale..No. 3 color	-31½	-31½
180 Pale.....No. 3 color	-30	-30
150 Pale.....No. 3 color	-24½	-24½

BLACK OIL (bbls.)				
25-30 cold test.....	14	-15	14	-15
15 cold test.....	15	-15½	15	-15½

MEDICINAL OILS (Includes Price of Drums) (Penna. Stocks)	Mar. 8	Mar. 1
Domestic.875-.885s.g.....	1.00-1.08	1.00-1.08
Domestic.865-.870s.g.....	.75- .80	.75- .80
Russian.885-.890s.g.325-330 vis.	1.20-1.25	1.20-1.25

WAXES (Penna. Stocks) (F. A. S. Carload Lots)		
WHITE CRUDE SCALE		
122-124 A. m. p.....	-05¼	-05¼
124-126 A. m.p.....	-05¼	-05¼
MATCH		
105-108 A. m. p.....	-06	-06
FULLY REFINED		
120-122 A. m. p.....	06	-06
123-125 A. m. p. Philadelphia	06¼	-06¼
125-127 A. m. p.....	06¼	-06¼
128-130 A. m. p.....	06¼	-06¼
130-132 A. m. p.....	06¼	-06¼
133-135 A. m. p.....	06½	-06½
135-137 A. m. p.....	-07¼	-07¼
SEMI REFINED		
122-124 A. m. p.....	-05¼	05¼
YELLOW CRUDE SCALE		
124-126 A. m. p.....05¼		-05¼

PETROLATUMS (Penna. Stocks) Per Pound		
Dark Green.....	02¾	02¾
Veterinary.....	03¼	03¼
Light Amber.....	03¾	03¾
Dark Amber.....	03¾	03¾
Cream.....	06¾	06¾
Lily White.....	08½	08½
Snow White.....11	-11½ 11	11½

Gulf Export Market

Gasoline
F. O. B. Seaboard
Shipments of 20,000 Bbls. and over

	Mar. 8	Mar. 1
U. S. Motor, Cargo.....	11¾- 11¾	11½ .12
60-62 400 e. p. Bulk.....	13¾-.13¾	.13¾
64-66, 385 e. p. Bulk.....	14¾- 14¾	-.15
U. S. Motor, Cases (cargo lots)..	2.25	2.25
64-66, Cases (cargo lots).....	2.40	2.40

KEROSENE		
Water White, 41-43 bulk....	08½-08¾ 08	-08¾
Prime White, 42-44 bulk....	07½-07¾ 07	-07¾
Water White, cases (cargo lots)	1 85	-1 80
Prime White, cases (cargo lots).	1.75	-1.70

DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, bulk*.....	04¾-05	04¾-05
32 plus, bulk, Dark.....	04½-05	04½-05
Grade C, Bunker oil.....	1 60	-1.60
Cargoes.....	1.50	-1.50

*Transparent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS F. O. B. Steamer Tampico		
Heavy, Taxes to be added.....	1.15-1.18	-1.15
Grade C, Bunker oil Taxes paid.....	1.45	1.45
Grade C, Bunker oil F. A. S. New Orleans.....	1.60	1.60

Lubricating Oils

SOUTH TEXAS

(Viscosity at 100°F; cold test 0)
(Tanker, F. O. B. Houston)

	Mar. 8	Mar. 1
100 Vis. No. 2 Unfiltered Pale....	07	07
150 Vis. No. 2½ Unfiltered Pale..	09	09
200 Vis. No. 3 Unfiltered Pale....	11	11
300 Vis. No. 3 Unfiltered Pale....	14	13½
500 Vis. No. 3½ Unfiltered Pale..	15	15
200 Vis. No. 5½ Red Oil.....	11	11
300 Vis. No. 5½ Red Oil.....	12½	13
500 Vis. No. 6 Red Oil.....	13¼	13¼
800 Vis. No. 6 Red Oil.....	16½	17

Pacific Export Market

Cargo lots quotations at seaboard, Los Angeles)

	Mar. 8	Mar. 1
Gasoline, U. S. Motor— 54°—56°.....	8 -10	8 -10
Gasoline—U. S. Motor blends and special cuts...	9 -10½	9 -10½
Gas Oil, 24°—30°B. per bbl.....	$1.15	$1.15
Diesel Oil, 27°B—plus per bbl.....	$1.15	$1.15
Bunker Oil, 14°—18°B. per bbl.....	$1.00	$1.00
Fuel Oil, 14°—18°B. per bbl.....	$1.00	$1.00
Kerosene, W. W. 40°—42° B per gal., 125-150 flash test.....	05 -05½	05 -05½

Cased Goods

Gasoline, U. S. Motor.....	$2.35	$2.35
Kerosene, W. W. 40°—42° B per case, flash test 125-150.....	$1.40-1.50	$1.40-1.50

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being products made from Domestic (including California) and Mexican Crudes.

	Mar. 8	Mar. 1
U. S. Motor Gasoline, Tank Cars Delivered greater N Y.	-13½	-13½
U. S. Motor Gasoline, Tank Cars Bayonne.....	-12½	-12½
Kerosene, 41-43 150 W. W. Tank Cars Del'd greater N.Y.	-11	-.11
Grade C Bunker f.o.b. N.Y. Ref.	1.75	1.75
Diesel Oil f.o.b. Refinery.....	2.30	2.30
Gas Oil, 36-40, Bulk Refinery..	-06	-06
Gas Oil, 28-34 Bulk, Refinery	-05½	-05½

Prairie Continues to Increase Shipments

Staff Special

TULSA, March 8.—On account of the fact that February was a short month, shipments of the Prairie Pipe Line Co. showed a decrease in total of 115,985 barrels. In daily averages, however, the company shipped 10,330 barrels a day more in February than it did in January. In other words, if the two months had been of equal length, February's shipments would have been greater than January's by 320,000 barrels. During January, shipments totaled 4,187,390 barrels, or 135,077 barrels daily, while in February they totaled 4,071,405 barrels, or 145,407 barrels daily.

Prairie Pipe Line shipments for the past six months have been as follows:

Month	Shipment	Daily Average
September, 1925	3,688,343	122,945
October	3,990,645	128,730
November	3,850,769	128,359
December	4,182,026	134,904
January, 1926	4,187,390	135,077
February	4,071,405	145,407

Kentucky Market Holding Up

LEXINGTON, KY., March 8.—Gasoline is holding up well with fair demand considering weather conditions. Today's prices in central Kentucky were: 58-60 U. S. Motor 11¾ cents; 60-62, 425 e.p. 12¼; 64-66, 400 e.p. 13¼, and 68-70, 360 e.p. 14¼. Kerosene demand is good with 41-43 water white 8½ cents. Gas oil is quiet at 5¾ cents.

TULSA, March 8.—Hearing of the port differentials rate case has been tentatively set for Tulsa on March 12. Sessions will be held at the Mayo hotel by Examiner Koch of the Interstate Commerce Commission. It is probable that a hearing will be held at Kansas City on March 16.

British Importations

During the week ended February 8th there were 8,140,762 gallons of petroleum imported into the United Kingdom. Larger receipts were:

Consignee	Imperial Gallons	Produc	Port of Origin
London:—			
Shell	149,039	Fuel Oil	Singapore
Anglo-Amer...	650,000	Lubes	Baytown
Anglo-Amer...	1,168,110	Gas Oil	Sabine
Anglo-Amer...	903,400	Lubes	New York
Anglo-Amer...	183,890	Kerosene	New York
Liverpool:—			
Vacuum Oil...	650,000	Lubes	Phila.
Anglo-Amer...	492,000	Lubes	Baytown
Southampton:—			
Nat'l Benzol...	1,000,000	Gasoline	San Pedro
Swansea:—			
Nat'l Oil Ref...	122,865	Crude	Abadan
Nat'l Oil Ref...	131,161	Crude	Abadan
Nat'l Oil Ref...	2,175,385	Crude	Abadan

Crude Oil Prices All Fields

ALL PRICES EFFECTIVE, *March 8*

EASTERN FIELDS
Posted by Joseph Seep Purchasing Agency

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.65	Keister Grade in National Transit Lines (Butler Co.)	$2.45
Bradford District Oil in National Transit Lines (Bradford District)	3.65	Gaines, Tioga Co. (Pa.)	2.95
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.55	Cabell Grade in Eureka Pipe Lines (West Virginia)	2.20
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.55	Corning Grade in Buckeye Pipe Lines (Ohio)	2.35
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.50	*Somerset Medium in Cumberland Pipe Lines (Kentucky)	2.30
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.30	*Somerset Light in Cumberland Pipe Lines (Kentucky)	2.45
		Ragland Grade in Cumberland Pipe Lines (Kentucky)	1.15

*Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS
Posted by Ohio Oil Co.

Wooster	$2.25	Indiana	$2.00	Plymouth	$1.65
Lima	2.23	Princeton	2.12	*Canadian Petrolia	2.63
Waterloo	1.10	Illinois	2.12	*Posted by Imperial Oil, Ltd.	

OKLAHOMA, KANSAS And NORTH TEXAS FIELDS
(Prices of Prairie Oil & Gas Co.)
(Prairie's prices apply in Oklahoma, Kansas, North and Central Texas.)

28-28.9	$1.40	41-41.9	$2.44
29-29.9	1.48	42-42.9	2.52
30-30.9	1.56	43-43.9	2.60
31-31.9	1.64	44-44.9	2.68
32-32.9	1.72	45-45.9	2.76
33-33.9	1.80	46-46.9	2.84
34-34.9	1.88	47-47.9	2.92
35-35.9	1.96	48-48.9	3.00
36-36.9	2.04	49-49.9	3.08
37-37.9	2.12	50-50.9	3.16
38-38.9	2.20	51-51.9	3.24
39-39.9	2.28	52 and above	3.32
40-40.9	2.36		

The Texas Co. adopted same schedule as Prairie on Feb. 1.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie and Moran crudes all in Texas.)

Effective Feb. 1, Humble posted same gravity and price schedule as that posted by Prairie, excepting that Humble is paying 8c less for each full degree below 28 gravity.

Magnolia Petroleum Co. Prices
In Oklahoma, Kansas and North Texas

Effective Feb. 1, Magnolia posted same gravity and price schedule as Prairie, in all fields where it purchases on a gravity basis, excepting that it is paying $1.20 for all oil below 28 gravity.

Effective Feb. 1, Corsicana heavy was advanced to $1.15 per barrel.

NORTH LOUISIANA—ARKANSAS FIELDS
***Prices of the Standard Oil Co. of Louisiana**

Caddo, below 32	$1.85	Haynesville, below 33	$1.75	Smackover, 24-24.9	$1.25
do 32-34.9	2.00	do 33 and above	1.85	do 25-25.9	1.30
do 35-37.9	2.10	El Dorado, below 33	1.75	do 26-26.9	1.35
do 38 and above	2.20	do 33 and above	1.85	do 27 and above	1.40
Homer, below 31	1.60	Bull Bayou, 32-34.9	1.70	De Soto	2.05
do 31-32.9	1.75	do 35-37.9	1.85	Crichton	1.85
do 33-34.9	1.85	do 38 and above	2.00	Bellevue	1.65
do 35 and above	1.95	Smackover, below 24	1.00	Cotton Valley	1.10

*Same prices maintained by The Texas Co., Gulf Refining Co. of Louisiana and Louisiana Oil Refining Corp. All purchasers of Smackover have maintained since Feb 1 and 2, the same gravity and price schedule as Standard. Gulf is paying 95c for Calion (East El Dorado Crude.) Louisiana Oil Refg. Corp. is paying $1.40 for Urania, La. crude, effective March 1.

STEPHENS, ARKANSAS
Posted by Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

26 and above	$1.50	Below 26	$1.30

GULF COASTAL FIELDS
(Posted by Humble Oil & Refining Co., The Texas Co., Gulf Production Co., Sun Oil Co. and Sinclair Crude Oil Purchasing Co.)

Grades A	$1.50	Grades B	$1.25

Goose Creek, Hull, Orange and Pierce Junction are the only Gulf Coastal fields that have A and B grade classifications. All other fields are classified as A grades only.

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co.

†Salt Creek 29-29.9	$1.48	36-36.9	$2.04	Rock Creek	$2.00
30-30.9	1.56	37 and above	2.12	†Osage	2.15
31-31.9	1.64	Elk Basin	2.15	†Cat Creek, Mont.	2.15
32-32.9	1.72	Grass Creek light	2.15	Sunburst, Mont.	1.15
33-33.9	1.80	Big Muddy	2.00	†Hogback, N. Mex.	2.20
34-34.9	1.88	Lance Creek	2.15	Artesia, N. Mex.	1.70
35-35.9	1.96				

†Posted by Midwest Refining Co. Midwest also buys Grass Creek light, and Elk Basin.
The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Prices of Standard Oil Co of California

Standard Oil Co. of California on Sept. 22 reduced California crude from 10 to 35 cents per barrel and posted 19 new price classifications in the various fields. Instead of paying the same price for the same gravity of oil in all fields regardless of the value of the oil, as it previously has done, the Standard put into effect a new schedule which provides a different schedule of prices for each field and takes into account the varying values of oils of the same gravity in the different fields.

On Oct. 27, it further reduced heavy oils in amounts ranging up to 15 cents. New base price for heavy oils in the San Joaquin Valley is 75 cents, in Southern California fields, 85 cents, and in the Rosecrans-Dominguez, Santa Maria and Ventura county fields, it is $1 per barrel for 14 to 14.9 gravity. Light oils remain unchanged.

The complete schedule of prices in California can be obtained from the editorial department of National Petroleum News on application.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f.o.b. shipping point as effective this date.

Refiners' Supplies

	Mar. 8	Mar. 1
Soda Ash light 58% bags cwt.	-$1.38	-$1.38
Silicate of Soda 60 deg. drums .....cwt.	- 1.65	- 1.65
Sal Soda wks .....cwt.	1.10- 1.25	1.10- 1.25
Caustic Soda 70% solid..cwt.	- 3.10	- 3.10
Chloride of Lime.....cwt. works	-2.00	- 2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point ....per ton	-10.00	-10.00
Liquid Chlorine tank cars works lb.....	-.04	-.04

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads spot.....lb.	10.7	11.2
February.....	10.7	11.2
Tanks, spot	9.8	10 4
Boiled carloads spot.....lb.	10.8	11 3
*Soya Bean spot, Bbls... lb.	13½	13½
Animal Oils—		
English Degras.....lb.	.05½	-.05½
Domestic Degras, bbls.. carloads.....lb.	-.04¾	-.04¾
*Horse .....lb.	-.10	-.10
Oleic Acid—		
Dist. Bbls.....lb.	.10¾-.11¼	.10¾-.11¼
Saponified Bbls.....lb.	.11¼-.11¾	.11¼-.11¾
Castor Oil—		
No. 1 Carlots, Bbls.....	-.13½	-.13½
No. 3 Carlots, Bbls.....	-.13	-.13
Lard Oils—		
Prime		
Winter Strained. to 1½ffa.40‡45c.t.lb	.17½	.17½
Extra		
Winter Strained. 2 to 4½ffa.40/45c.t.lb.	.14¾	.14¾
Extra .... 4 to 5 ffa.40/45c.t.lb.	.14¼	.14¼
Extra No. 1 7 to 10 ffa.40/50c.t.lb.	.13½	.13½
No. 1.....15 to 18 ffa.40/45c.t.lb.	.13	.13
No. 2.....22 to 25 ffa.40/45c.t.lb.	.12¾	.12¾
Prime Edible Tallow under 1½ffa. 40/45c.t.N.Y.....lb.	- 10¾	-.10¾
Tallow acidless.....lb.	-.12¾	-.12¾
Lard Stearine.....lb.	-.17½	-.17½
Oleo Stearine.....lb.	-.13	-.11¼
Neatsfoot Oil—		
Pure.....bbls.-lb.	.17¾	.17¾
Extra.....do lb.	.13½	.13½
No. 1.....bbls.-lb.	.13	.13
Cold pressed.....lb.	.22¾	.22¾
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.	-.70	-.70
White.....gal.	-.75	-.75
Yellow bleached.....gal.	-.75	-.75
*Herring tank cars coast.....gal.	-.50	-.50
Whale, extra winter bleached.....gal.	-.82	-.82
Seal.....gal.		Nominal
Naval Stores—		
Turpentine, N. Y.....gal.	.96	.95
Turpentine†.....gal.	.90	.89
Rosin, B. N. Y.....Bbl.	11.25	12.25
Rosin, F. N. Y.....Bbl.	14.00	14.00
Rosin, B†.....Bbl.	9.50	10.50
Rosin, F†.....Bbl.	12.50	12.50
Rosin Oil 1st run.....gal.	.65	.68½
Rosin Oil 2nd run.....gal.	.70	.73½
Pine Tar—		
Kiln Burnt.....Bbl.	15 00	15 00
Retort.....Bbl.	16.00	16.00

†Savannah, Ga. market.
*Nominal.

Alcohol—Denatured		
Formula 5		
Bbls.....gal.	-34	-34
Drums.....gal.	-33	-33

Chlorine in Demand Sulfuric Acid Quiet

By Special Correspondent

NEW YORK, March 8.—Following is a review of the markets for materials used in compounding and refining:

Alcohol weak. Buyers holding off. Present requiremen'ts covered by contracts. No price changes, but occasional shading reported.

Animal Oils quiet. Oleo stearine stronger and now 13 cents, tanks. Demand slightly better. Lard oils unchanged. Buying routine and light. Neatsfoot oil movement spasmodic at same old prices. More interest in domestic degras at 4¾ to 5 cents. Tallow oil marking time. Oleic acid quiet.

Bleaching Powder steadier but bulk of business hand-to-mouth. Stocks fair. Better inquiry for immediate shipment. Futures neglected.

Sal Soda marking time. Prices unchanged. Competition keen. Stocks fair. Most business against contracts.

Caustic Soda moving in slightly larger way. Most buyers showing more interest but reluctant to purchase ahead.

Liquid Chlorine in good demand at 4 cents a pound, in tanks. Stocks are depleted.

Soda Ash steady but less active. Buyers operating conservatively. Prices are unchanged.

Linseed Oil dull and easy. Linoleum and paint manufacturers not buying as heavily as expected. Crushers offering freely and reports current of sales three points under quoted prices. Soya bean oil dull and unchanged.

Naval Stores steadier. Turpentine demand lagging, but there is less shading. Hamburg and London concerns buying rosin, but domestic demand is lighter. Rosin oils in fair demand. Tar and pitch quiet.

Sulfuric Acid movement quiet. Stocks fair. Buying routine. Prices unchanged.

HOUSTON, March 8.—Contract customers are coming into the Gulf Coastal lubricants market. Export movement of both red and pale oils and also shipments to domestic contract customers have helped to clear the market this week. One refiner has sold a cargo of 25,000 barrels of red and pale oils, mostly the 200, 300 and 500 viscosity grades. Price revisions affect red oils only. The pales are unchanged in price.

Benzol Market

NEW YORK, March 8.—Conditions in the motor benzol market have undergone little change. Leading marketers are firm at 23 to 24 cents a gallon in tank cars at the ovens, spot shipment. Demand is improving, but handlers say there is little chance of a change in price.

Production is about the same as a week ago. Spot stocks are not large and big buyers are now negotiating for their spring and summer requirements. The advances in gasoline tank wagon prices have improved sentiment considerably. Buyers with export connections are still finding great difficulty in securing offerings.

Shipments From Los Angeles Gain

LOS ANGELES, March 8.—Bulk petroleum shipments from Los Angeles harbor during the week ending Saturday showed a substantial gain over those of the previous week, 32 tankers taking out 2,284,486 barrels.

Quantities of products shipped and destinations are shown in the following table:

The Atlantic seaboard shipments were as follows:

Str. John D. Archbold, 139,844 barrels of fuel oil to Standard of New Jersey Bayonne: Str. George W. Barnes, 73,000 barrels gasoline to Pan American Petroleum Co. Providence; Str. Utacarbon, 76,284 barrels crude for Union Oil Co. of California, Philadelphia; Str. Swifteagle, 79,000 barrels crude to Swiftsure Oil Co., Fall River; Str. Yorba Linda, 73,600 barrels gasoline for General Petroleum Corp., Baltimore; Str. J. W. Van Dyke, 55,000 barrels gasoline to Atlantic Refining Co, Philadelphia; Str. Algonquin, 76,000 barrels fuel oil Standard Transportation Co., Bayonne; Str. Swiftsure, 77,200 barrels crude to Swiftsure Oil Co., Fall River; Str. Samuel Q. Brown, 76,000 barrels crude to Tide Water Oil Co., Bayonne; Str. Agwibay, 87,000 barrels crude to Atlantic, Gulf & West Indies Steamship Co., Bayonne.

Shipments by Products and Destinations

	Barrels				
	Crude	Kerosene	Fuel	Gasoline	Gas Oil
Atlantic Domestic	395,484	.....	215,844	201,600	.....
Atlantic Foreign	.....	.....	.....	.....	.....
Pacific Domestic	723,012	.....	377,657	97,948	.....
Pacific Foreign	71,200	.....	201,741	.....	.....

Atlantic Domestic total all products	812,928 bbls.
Atlantic Foreign, total all products	
Pacific Domestic, total all products	1,198,617 bbls.
Pacific Foreign, total all products	272,941 bbls.

OIL STOCKS AND FINANCES

National Petroleum News

White Eagle Reports Largest Sales in Its History; Net Also Gains

CLEVELAND, March 8

NET income of the White Eagle Oil & Refining Co. in 1925 amounted to $1,466,860 equivalent to $2.99 a share on the 490,000 shares outstanding at the end of the year, as compared with $2.24 a share on 460,000 shares in 1924. Shares are without par value.

Gross sales of the company were the largest in its history and net profits, after all charges including income taxes, ranked second only to 1922. After paying $965,000 in dividends the company carried to surplus $501,860.

During the year $400,000 of the company's 5½ per cent notes issued in 1924 were retired. The balance sheet of Dec. 31 shows approximately the same ratio of current assets to current liabilities, 5 to 1, as at the end of 1924. Net working capital on Dec. 31 was $4,309,509.

President L. L. Marcell made no statement on the 1925 operations other than the financial report, which follows with reports for preceding years:

White Eagle Oil & Refining Co. Income Accounts

	1925	1924	1923	1922	1921
Sales	$16,483,518	$14,335,001	$14,693,386	$13,834,818	$ 9,251,382
Cost of sales	.....	9,239,909	9,554,571	9,036,343	6,615,343
Gross profits	.....	$ 5,095,092	$ 5,138,815	$ 4,798,475	$ 2,636,039
General expenses, etc	.....	2,488,592	2,317,033	1,467,808	1,016,740
Operating profit	$ 3,140,146	$ 2,606,500	$ 2,821,782	$ 3,330,667	$ 1,619,299
Other deductions	388,531	344,030	230,134	278,628	61,881
Federal taxes	164,000	114,000	40,000	192,000	29,000
Depreciation, depletion	1,120,754	1,119,084	1,203,733	967,101	737,810
Net income	$ 1,466,860	$ 1,029,386	$ 1,347,915	$ 1,892,938	$ 790,608
Dividends	965,000	920,000	920,000	894,042	.....
Surplus	$ 501,860	$ 109,386	$ 427,915	$ 998,896	.....

White Eagle Oil and Refining Co. Balance sheets as of Dec. 31

ASSETS

	1925	1924	1923	1922	1921
Cash	$ 1,379,455	$ 1,405,805	$ 468,585	$ 607,933	$ 408,801
U. S. Securities	.....	.....	.....	25,836	25,836
Notes, accounts receivable	1,197,947	970,543	785,597	1,077,618	598,423
Oil inventories	* 2,817,183	2,166,154	1,934,562	1,373,942	1,074,970
Material, supplies	.....	107,097	180,637	121,020	92,113
Investments	208,572	178,258	166,285	161,225	137,007
Refineries, tank cars, etc	20,978,139	19,709,078	18,532,732	15,184,389	9,897,162
Deferred charges	185,265	202,263	73,282	65,452	66,918
Total	$26,766,561	$24,739,198	$22,141,680	$18,617,415	$12,301,230

*Includes materials and supplies.

LIABILITIES

Accounts, notes payable	$ 1,004,449	$ 807,486	$ 1,903,989	$ 2,156,616	$ 1,164,076
Other accruals	80,627	85,869	180,017	55,085	63,786
Deferred notes payable	172,417	272,262	473,883	293,522	269,986
Marketing Co. certificates	.....	.....	300,000	400,000	500,000
5½% 5-year gold notes	2,400,000	2,800,000	.....	.....	.....
Depreciation, depletion res	8,838,597	7,615,825	6,046,545	4,117,862	2,592,125
Other reserves	185,262	185,917	84,792	84,860	95,469
Capital and Surplus	*14,085,208	12,971,829	13,202,454	11,509,470	7,615,788
Total	$26,766,561	$24,739,198	$22,141,680	$18,617,415	$12,301,230

*Represented by 490,000 shares of no par value.

Sun Oil Co. Nets $3.40 Per No Par Share

CLEVELAND, March 8.—Sun Oil Co., perhaps the closest held of the large oil corporations, a large majority of the stock being held by the Pew family, reports for 1925 net profits of $3,602,128 after all charges including estimated income taxes. This was an average of $3.40 a share on the outstanding 1,057,159 shares of no par stock. In the 10 years ended Dec. 31, 1924, the company averaged $3.14 a share on that amount of stock.

The balance sheet as of Dec. 31 shows increased current assets and decreased current liabilities as compared with the company's condition at the end of 1924. Current assets on Dec. 31, 1925, amounted to $14,749,352 and current liabilities to $4,163,712, leaving net working capital of $10,585,640.

The Sun's 1925 income statement follows:

Gross	$48,697,402
Expenses, etc.	42,751,625
Operating income	$ 5,945,777
Other income	775,646
Total income	$ 6,721,423
Interest	675,821
Depreciation and depletion	2,099,439
Estimated federal taxes	344,035
Net income	$ 3,602,128
Dividends	836,996
Surplus	$ 2,765,132

The balance sheets as of Dec. 31 for 1925 and 1924 compare:

ASSETS

	1925	1924
Cash	$1,001,723	$ 576,745
Acc'ts, bills rec.	4,531,214	3,302,578
Investments	8,603,833	10,240,529
Inventories	9,216,617	9,192,939
Due from subs.	.....	5,852,479
Real estate, plants, etc., after deprec. deplet.	29,612,472	21,948,997
Deferred charges	1,904,090	1,152,371
Total	$54,869,949	$52,267,666

LIABILITIES

Acc'ts, bills pay.	$3,455,575	$3,529,354
Federal taxes	344,035	.....
Accrued taxes, int.	364,102	.....
Due to subs.	.....	2,099,974
Funded debt.	10,236,000	14,000,000
Trust Certif.	.....	445,000
Capital-surplus	*40,470,237	32,198,338
Total	$54,869,949	$52,267,666

*Represented by 1,057,159 no par shares.

Pierce Petroleum Co. Reports Profit

NEW YORK, March, 8.—Preliminary report of Pierce Petroleum Co. shows net income of $216,161 after depreciation, interest and other charges, equivalent to 8 cents a share on the 2,500,000 shares of common stock outstanding, as compared with a net loss of $377,470 in 1924.

The company states that subsequent to the reorganization May 1, 1924, to the end of that year the net loss was $511,186 but that a profit of $133,716 had been earned between Jan. 1 and April 30, 1924.

Consolidated income accounts for 1925 and 1924 compare:

	1925	1924
Oper. profit	$1,221,377	$604,391
Int. Chgs., etc.	261,225	372,249
Depreciation	743,991	609,612
Net income	$216,161	*$377,470

*Net loss.

PITTSBURGH, March 8.—Lone Star Gas Co. in 1925 netted $3,033,693 after income taxes, depreciation, depletion and other reserves, equivalent to $7.10 a share of the outstanding 427,000 shares of $25 par common stock. In 1924 net profits averaged $3.79 a share and in 1923, $3.24 a share.

Transactions In Oil Shares on New York Stock Exchange

1925 High	1925 Low	1926 High	1926 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Mar. 6 Sales	First	High	Low	Last	Ch'ge
79¾	48	74	69	(sh)	200,000	N.P.	American Republics	.....	.....	100	69⅞	69⅞	69⅞	69⅞	—1⅝
47¼	32	59½	44¾	$	56,000,000	$25	Associated Oil	50cQ	Jan. 25, 26	86,900	58⅝	59½	x58	58⅜	+ ½
117½	95⅝	110	97		50,000,000	100	Atlantic Refining	.....	June 16, 24	14,700	102¾	103	97	100	— ½
117¾	113½	117½	116½		20,000,000	100	do pfd	$1¾Q	Feb. 1, 26	200	116½	117½	116½	117½	+1
33½	18¾	33½	26		18,428,350	25	Barnsdall Corp. A	50cQ	Jan. 2, 26	50,(●)	26⅞	27	26	27⅛	+1¼
30	16	29½	25		3,713,275	25	do B	50cQ	Jan. 2, 26	1,000	26	26	25	25¼	— ¾
84⅜	23⅞	38⅝	30¾	$	44,923,000	$25	California Petroleum	50cQ	Mar. 1, 26	93,700	33⅜	33¾	31	32¾	— ⅛
70	42½	73	50		19,834,300	100	General Asphalt	.....	.....	45,900	56	62⅛	50	62⅛	+6⅛
109	86½	113¾	94⅞		7,416,000	100	do pfd	$1¾Q	Mar. 1, 26	2,200	98¼	103	94⅞	101⅞	+3⅞
59⅛	42	59½	49½		29,223,650	25	General Petroleum	75cQ	Mar. 15, 26	110,000	52½	55¾	49½	55	+2⅛
85	59	72	59		25,000,000	100	Houston Oil	.....	.....	6,600	64	64	59	64	— ⅛
41¾	13½	34	20½	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Jan. 11, 26	36,200	28¾	28¾	20½	25¾	—2¼
14¼	5½	13¾	9½	$	3,204,590	$10	Indian Refining	.....	Dec. 15, 20	7,500	11½	11⅝	10	11⅜	+ ½
12⅝	6	12½	9½		4,545,860	10	do ctfs	.....	.....	1,400	10	10½	10	10½	0
110	77	104	104		2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
1½	¼	¾	¼		1,678,760	10	Kansas & Gulf	.....	.....	3,500	½	½	¼	¼	— ¼
23¾	13¾	19¾	12	(sh)	1,121,530	N.P.	Louisiana Oil	.....	.....	30,900	16⅜	16⅜	12	14¾	—1⅜
35½	20⅜	28⅜	20¾	(sh)	330,000	N.P.	Maracaibo Oil	.....	.....	9,800	24½	24½	20¾	22¾	—1¼
60½	32⅝	60¼	51⅝	(sh)	1,894,518	N.P.	Marland Oil Co	$1Q	Dec. 31, 25	129,000	56⅝	56⅞	51⅛	55½	—1
250	225	.....	.....	$	45,942,800	$100	Mexican Petroleum	$3Q	Jan. 20, 26	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....		12,000,000	100	do pfd	$2Q	Jan. 20, 26	.....	.....	.....	.....	.....	.....
22½	29	12⅜	6	(sh)	945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	11,200	8¼	8⅞	7⅛	8⅜	+ ⅜
38	25¾	37	28¾	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 23	70,900	32½	32½	28⅝	31	—1½
94¼	83	97	94	$	6,718,000	$100	do pfd	$1¾Q	Mar. 1, 26	700	97	97	95¼	95¼	—1⅜
3¼	⅝	2½	1½		26,013,760	10	Middle States	.....	July 1, 23	5,700	1½	1½	1¼	1⅜	— ⅛
1½	1½	1⅝	⅞		3,786,460	.....	do ctfs	.....	.....	500	⅞	⅞	⅞	⅞	0
78½	51⅜	83¼	74¼	(sh)	3,500,000	N.P.	Pacific Oil	$1.50S.A.	Jan. 20, 26	115,900	80⅜	81¾	76½	81⅜	+ ⅜
85⅞	59½	76½	60¼	$	48,307,400	$50	Pan American P. & T	$1.50Q	Jan. 20, 26	10,600	64	64⅝	60¼	63¾	— ¼
84½	60⅝	78⅜	62		90,484,800	50	do B	$1.50Q	Jan. 20, 26	85,900	66¼	66¾	62	65	— ⅜
49¾	37¾	46	34	(sh)	400,000	N.P.	Pan American Western B	50cQ	Jan 30, 26	21,700	40	40	34	38¼	—1¾
6¼	2¼	11¾	4½	(sh)	198,770	N.P.	Panhandle P. & R	.....	.....	14,100	10¼	11	7¾	10⅝	+1⅞
80½	37	85	51	$	2,935,200	$100	do pfd	.....	July 2, 23	600	70	76	67	76	+2
47⅜	36¼	48⅝	42⅝	(sh)	2,045,381	N.P.	Phillips Petroleum	75cQ	Jan. 2, 26	233,000	45	45⅜	42⅝	45	0
3½	1¾	1⅜	1⅜	$	29,622,925	$25	Pierce Oil Corp	.....	.....	2,800	1⅝	1⅝	1⅛	1⅜	— ⅛
40	20¾	27⅛	24		15,000,000	100	do pfd	.....	Feb. 1, 22	100	25	26	25	25	0
8¼	4½	7	4⅞	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	9,900	5	5½	4⅜	5⅜	+ ⅜
32⅝	12½	17½	12⅝	$	11,467,850	$50	Producers & Refiners	.....	Sept. 15, 23	4,800	13¾	14¼	12⅝	14⅝	+ ¼
47⅜	27	35	32½		2,845,350	50	do pfd	.....	May 1, 25	1,400	33	33	33	33	0
33¾	25⅜	31	26¾		75,959,250	25	Pure Oil Co	87½cQ	Mar. 1, 26	38,100	27⅝	28	26⅜	27¾	— ⅛
108½	103	111¼	107		13,000,000	100	do 8% pfd	$2Q	Oct. 1, 25	300	109	109	109	109	—2¼
57⅜	48¼	57⅜	50	(sh)	773,883	13.40	Royal Dutch, N. Y. shares	$1.339	Jan. 29, 26	9,500	52	52¼	50	52	+ ⅜
49	39½	48⅝	45⅝	(sh)	93,599	£2	Shell Transport & T	96½c	Jan. 22, 26	.....	.....	.....	.....	.....	.....
28⅜	21⅜	28⅛	24	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 25	32,300	25½	25⅞	x24	25½	+ ⅜
106½	99½	106½	103	$	20,000,000	$100	do pfd	$1½Q	Feb. 15, 26	300	104	104	103	103⅞	— ⅜
28½	17¾	28⅝	20¾		7,207,620	10	Simms Petroleum	50cS.A.	Jan. 2, 26	42,500	24⅛	25	20¾	23⅜	— ⅜
24⅞	17	24⅞	20½	(sh)	4,489,320	N.P.	Sinclair Consolidated	.....	May 31, 24	153,100	23¾	23¾	21⅛	22¾	—1
94⅛	78¾	95	91	$	17,852,200	$100	do pfd	$2Q	Feb 15, 26	800	93¾	93¾	93	93⅛	—1⅛
32½	21¾	32⅞	27		23,024,590	25	Skelly Oil Co	50cQ	Mar. 15, 26	31,300	29⅝	29⅞	27	28⅝	— ⅜
67½	51½	62¼	54⅛		237,610,350	25	S. O. California	50cQ	Mar 15, 26	44,900	56¼	57⅝	54⅛	55⅞	— ⅜
47½	38¾	46¾	40¼		513,456,025	25	S. O. New Jersey	25cQ	Mar 15, 26	91,600	42⅝	42⅝	40¼	44⅜	+ ⅜
119	110¾	118¾	116¾		199,972,900	100	do pfd	$1¾Q	Mar. 15, 26	4,400	117	118¾	116¾	118¼	+1
45⅜	38⅛	41⅝	31½	(sh)	1,103,776	N.P.	Sun Oil	25cQ	Mar. 15, 26	8,300	36½	36½	31½	35¾	— ⅝
6⅜	2	4¼	2½	(sh)	1,121,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	5,300	2⅝	3	2¼	3	+ ⅛
55	42¾	54	50	$	164,450,000	$25	The Texas Co	75cQ	Dec. 31, 25	59,500	52¼	52⅜	50	51½	— ½
23⅜	10⅞	19½	12⅜		8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	32,900	14⅜	14½	12⅝	14⅝	0
36⅞	30¼	39¼	34¾	(sh)	2,018,231	N.P.	Tide Water Oil Co	25cQ	Dec. 31, 25	60,400	38⅜	38¾	36	37½	0
101	99	103	97	$	25,042,000	$100	do 5% pfd	$1.25Q	Feb. 15, 26	9,100	100½	102⅛	97	100 (	+2¼
5⅞	3½	4¾	3	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	45,500	3⅞	4	3	3⅞	0
43⅜	33	40	37¼	$	40,480,800	$25	Union Oil of California	50cQ	Feb. 10, 26	55,300	41¼	41½	38½	41⅜	0
134	96¼	94	80		24,423,300	100	Union Tank Car Co	$1¼Q	Mar. 1, 26	800	90	90	88	90	+2
117⅛	113¼	116½	113¾		12,000,000	100	do pfd	$1¾Q	Mar. 1, 26	200	115	115	115	115	+1¼
31¾	25½	29.4	26⅛	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 26	5,700	28	28	26⅛	27¼	— ¼

*New High †New Low xEx-dividend Total Sales 1,931,500

Standard Oil Stock Traded In New York Curb Market

1925 High	1925 Low	1926 High	1926 Low		Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Mar. 5 Sales	First	High	Low	Last	Ch'ge
26⅝	17¼	19¾	17	£	4,000,000	£1	Anglo American	32.4cS.A.	Jan. 4, 26	5,400	17½	17½	17	17⅛	0
4¼	1⅜	2¼	2	(sh)	500,000	N.P.	Atlantic Lobos	.....	.....	800	17	2⅛	2	2	— ⅛
12⅜	8	4½	3¾	$	10,000,000	$10	do pfd	.....	.....	100	4⅜	4⅜	4⅜	4⅜	0
240	205	248	226		1,000,000	100	Borne Scrymser	‡84S.A.	Oct. 15, 25	120	243	245	235	245	0
72	53½	59½	55		10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 26	100	56	56	55	55	—1½
74	48½	73¾	65		3,000,000	25	Chesebrough Mfg	62½cQ	Dec. 29, 25	600	70	70	67¾	69	—2
115	110	.....	.....		1,000,000	100	do pfd	$1¾Q	Dec. 31, 25	.....	.....	.....	.....	.....	.....
31½	21⅛	25⅞	20⅝		34,914,280	10	Continental Oil	25cQ	Mar. 15, 26	58,100	22½	22½	20⅝	22⅛	— ¼
17½	10	16	15½		1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	200	15½	15½	15½	15½	0
136	132	137	130		3,000,000	100	Cumberland Pipe Line	$3Q	Mar. 15, 26	70	130	131	130	131	—1
96	61	63¾	59		5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 26	200	60	60	60	60	0
68½	23½	32½	26½		16,000,000	100	Galena Signal Oil	.....	June 30, 25	675	27	28½	26½	28½	+1¼
105	88	94½	83		4,000,000	100	do new pfd	$2Q	Dec. 31, 25	10	86	86	86	86	+3
114	95	97½	92½		2,000,000	100	do old pfd	$2Q	Dec. 31, 25	90	95	96	95	96	+2
95	42¼	99⅝	82½		43,750,000	25	Humble Oil & Refining	30cQ	Jan. 1, 26	18,800	88½	89	82½	86	—3
134½	127	142	134¼		20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 31, 25	330	135½	136½	134¾	136	— ½
39¼	27¼	38¾	32½	(sh)	6,491,852	N.P.	Imperial of Canada (new)	25cQ	Mar. 1 26	17,300	35¼	35½	32½	34	— ½
84	57⅛	69½	58	$	5,000,000	50	Indiana Pipe Line	$1Q	Feb. 15, 26	1,050	67	69½	66½	67	+1
35⅜	22⅛	35¼	28¾	(sh)	7,118,138	N.P.	International Petroleum	25c	Feb. 15, 26	66,300	32¾	32½	28¾	31⅛	— ⅜
25⅝	16½	20⅝	17¾	$	6,362,500	$12½	National Transit	25cS.A.	Dec. 15, 25	400	18¼	18⅜	17¾	17¾	— ½
79	49¼	50	39		5,000,000	100	New York Transit	75cQ	Jan. 15, 26	200	46½	47	46½	47	0
88	67½	80½	70¾		4,000,000	100	Northern Pipe Line	$8S.A.	Jan. 1, 26	50	77	77	77	77	— ½
75¾	60¼	67¾	59¾		60,000,000	25	Ohio Oil Co	50cQ	Dec. 31, 25	6,400	61¾	61¾	59¾	60⅞	— ⅜
44½	19	23	16¼		10,000,000	25	Penn Mex Fuel	50c	May 21, 25	300	17⅛	17½	17⅛	17⅛	— ⅛
65½	45⅞	60¼	53¼		60,000,000	25	Prairie Oil & Gas	.....	July 31, 25	22,600	55½	57	53¾	56⅛	— ⅜
129¾	106	127	122½		81,000,000	100	Prairie Pipe Line	$2Q	Jan. 30, 26	2,025	126	126	122½	125	— ½
254	200	212	195		4,000,000	100	Solar Refining Co	$5S.A.	Dec. 19, 25	290	202	205	195	199½	—2
103	63	74½	61½		10,000,000	100	Southern Pipe Line Co	$1Q	Mar. 1, 26	900	63½	74½	63	70	+7
197	139	197	157		20,000,000	100	South Penn Oil Co	$1.50	Dec. 31, 25	480	169	170	157	168	—1
47½	45	50	39¾		20,000,000	25	do new	.....	.....	200	42½	42½	39¾	42½	—1¾
84	50	54½	52½		3,500,000	100	South West Pa. Pipe Line	$1Q	Dec. 31, 25	100	54	54	54	54	+ ½
.....	.....	58¾	52¾	(sh)	15,000,000	N.P.	S. O. California (new)	.....	.....	36,100	55½	56⅛	52¾	55¾	+ ⅜
70¾	59½	70½	61⅝	$	223,756,258	$25	S. O. Indiana	62½cQ	Mar. 15, 26	67,800	64¼	64⅞	61⅜	64¼	+ ⅜
46	30⅛	36½	29½		8,000,000	25	S. O. Kansas	.....	June 16, 24	5,300	31¼	31¼	29⅜	31	— ½
137	114¾	134⅜	108		16,864,434	25	S. O. Kentucky	$1Q	Mar. 1, 26	4,900	120	121	108	118½	—2
270	231	254	206		3,000,000	100	S. O. Nebraska	$5S.A.	Dec. 19, 25	310	243	243	206	230	—10
48⅝	40¼	47¾	31½		227,535,300	25	S. O. New York	35cQ	Mar. 15, 26	30,300	34	34	31½	32⅞	—1⅛
369	338	362	328		14,000,000	100	S. O. Ohio	$2½Q	Jan. 1, 26	210	356	336	328	335	—2
123	116	118½	117		7,000,000	100	do pfd	$1¾Q	Mar. 1, 26	.....	.....	.....	.....	.....	.....
27	12	23	15½		1,722,931	25	Swan-Finch Co	.....	Nov. 1, 19	50	15½	15½	15½	15½	—4½
109½	80⅛	109¼	100¼		61,919,950	25	Vacuum Oil Co	50cQ	Dec 19 25	800	100½	100⅞	100¼	100⅞	+ ⅜

Borne Scrymser $2 extra April 15 $4 extra Oct. 15 ‡Vacuum 50c extra Mar. 20, June 20, Sept. 19 Dec. 19 Dec 19 special $1 Dec 19 S.O. Neb. $10 extra Dec. 19 special $1 Dec. 19 S. O. Neb. $10 extra Dec. 19 Ohio Oil 50c extra Dec. 31. Chesebrough 62½c extra Dec. 29. Buckeye P.L. 59c extra Mar. 15. National Transit 50c extra Mar. 15.

Amerada Corp. Doubles Profits in 1925

NEW YORK, March 8.—Net profits of the Amerada Corp. and subsidiaries in 1925 were more than double 1924 net earnings. The 1925 net after all charges was equivalent to $4.28 a share on the outstanding 588,300 shares of $10 stock as compared with $2.04 a share on 585,600 shares in 1924.

The balance sheet of Dec. 31 shows a reduction of more than 50 per cent in crude oil inventory during 1925.

The consolidated income accounts of 1925 and 1924 compare:

	1925	1924
Operating income	$8,173,685	$5,690,387
Expenses	2,727,434	1,950,685
Leases abandoned, etc.	939,991	547,933
Balance	$4,506,260	$3,191,769
Other income	192,915	103,330
Total income	$4,699,175	$3,295,099
Depreciation and depletion	2,091,556	2,095,560
Federal taxes	89,442	.....
Net profit	$2,518,177	$1,199,539

Consolidated balance sheets as of Dec. 31 compare:

ASSETS

	1925	1924
Cash	$1,433,974	$ 338,654
Acc'ts rec.	487,418	532,341
Notes rec.	4,931	12,931
Suspense acc't	28,380	13,547
Oil inventory	611,775	1,261,892
Gasoline inv.	4,909	3,305
Investment	42,300	.....
Property, plant, etc.	8,596,723	7,596,723
Total	$11,210,409	$9,287,991

LIABILITIES

Acc'ts payable	$1,112,802	$ 744,475
Notes payable	.....	200,778
Federal taxes	89,442	.....
Other reserves	1,500,000	1,500,000
Capital stock	5,883,000	5,856,000
Surplus	2,625,165	986,738
Total	$11,210,409	$9,287,991

Cities Service Buys Tanker

NEW YORK, March 8.—Cities Service Transportation Co. has purchased the tank steamer Agwi Sea of 12,623 deadweight tons and with a capacity of 100,000 barrels cargo oil. The vessel is 485 feet long. A steel barge has been bought for the use of the Cities Service Refining Co. in the Boston harbor and in the vicinity of the refinery at East Braintree, Mass.

Oil Dividends

	Amt.	Payable	Stock of Record
Mountain Prod. q	20c	Apr. 1	Mar. 15
do extra	40c	Apr. 1	Mar. 15
Salt Creek Cons. q	15c	Apr. 1	Mar. 15
Sterling Oil q	10c	Apr. 5	Mar. 25
do extra	10c	Apr. 5	Mar. 25
Warner-Quinlan q	50c	Mar. 31	Mar. 15

Cleveland Stock Market

	Par	March 5 Bid	Asked	Last Sale
Canfield Oil Co.	$100	.....	109	108
do pfd.	100	97	100	100
Fred G. Clark Co.	10	2¼	3	4
National Refin. Co.	25	38⅝	42	38⅝
do pfd.	100	129	135	129½
Paragon Refin. Co.	25	7½	8¼	8
do pfd.	100	.....	70	67

x–Exdividend

New York Bonds

Week Ending March 5

	High	Low	Last	Ch'ge
Amer. Rep. Cor. Deb. 6s.	99	98⅞	99	— ¼
Associated Oil gold 6s.	102⅝	102	102⅝	0
Atlantic Refg. deb 5s.	100½	100	100⅜	+ ⅜
Barnsdall Corp. 6s.	100⅛	100	100	— ¼
Calif Petrol sf 6½s.	104	103⅝	104	0
Empire Gas & F 7½s.	102½	102	102½	0
Gen. Asphalt 6s.	105	105	105	0
Humble Oil & R. 5½s.	102¼	101¾	101¾	— ¼
Mid-Cont. Pet. 6½s.	102⅞	101½	102¼	+ ¼
Pan-Amer. P. & T. 7s.	106	105¾	106	0
Pan-Amer. P. & T. 6s.	106½	104½	106	+ ⅜
Pierce Oil deb. 8s.	105¾	105⅝	105⅝	0
Prod. & Refnrs. 8s wr.	111	111	111	— ¼
Sinclair Con. Oil col. 7s.	96½	94⅞	94⅞	—1⅜
SinclairCon.Oilcon.6½s	90½	90	90	— ⅜
Sinclair Con. Oil 6s.	111	107	109¾	— ⅞
Sinclair Crude Oil 6s.	101	100½	100¾	0
Sinclair Pipe Line sf 5s.	90¼	89⅜	90	+ ⅛
Skelly Oil 6½s.	121½	112	118½	—2¼
Superior Oil 7s.	97	97	97	0
UnionOilofCalif. 1st5s.	100¾	100⅝	100⅝	— ⅛
Union Oil of Calif. 5s-C.	96¾	96	96	— ¾

New York Curb Bonds

Week Ending March 5

	High	Low	Last	Ch'ge
Atl. Gulf & W I 5s.	72¾	69	72	—2
Cities Service 6s.	93¼	93⅛	93¼	0
Cities Service 6s new.	94	93¼	93¼	— ½
Cities Service 7s "C".	129⅛	128	128⅛	—1⅜
Cities Service 7s "D".	103⅜	102	102⅞	— ⅝
Galena S. O. 7s.	102¾	102¼	102¼	— ½
General Pet. 6s.	101¾	101¼	101¾	+ ⅜
General Pet. 5s.	94	93	93⅝	— ⅜
Gulf Oil 5s.	100	99	99⅝	0
Independ. Oil 6½s '31.	100¼	97½	98⅞	—1⅛
Pan Amer Pet 6s '40.	102	101	101½	—1¼
Pure Oil 6½s.	103¼	103	103	— ⅛
S O N Y 6½s.	106¼	105¼	106	— ½
Sun Oil 5½s.	99¾	99½	99¾	0
Tidal Osage 7s.	105⅛	104	105⅛	+ ⅞
Trans. Cont. Oil 7s.	94¼	92¼	93½	—1¾
United Oil Prod. 8s.	45	42	42	—3
Vacuum Oil 7s.	104⅛	103½	104	— ⅛
Valvoline 7s.	103½	103½	103½	0

New York Curb Market

Transactions week ended Mar. 5

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Sales	First	High	Low	Last	Ch'ge
11½	2½	14½	7¼	....	Amer. Maracaibo.	10,100	8⅝	9¼	7½	8½	— ⅛
8¾	5	6¾	5⅞	$10	Arkansas Nat. Gas.	1,300	5⅞	6⅛	† 5⅞	6	— ⅛
.....	.....	19¼	16⅝	N.P.	Beacon Oil.	7,700	18	18⅛	†16⅝	17½	— ½
47½	38	.....	.....	$25	British-American.	.....	.....	.....	.....	.....	.....
10¼	2¾	22⅞	10	25c	Carib. Syndicate.	85,100	16¾	17½	12½	15¼	—1¾
43	35	42⅛	37½	$20	Cities Service.	63,100	41	41¼	37⅞	41¼	0
85⅝	80¼	84	83	100	do pfd.	2,700	83¼	83⅜	†83	83	— ¼
8	7¼	7½	7⅜	10	do pfd. B.	300	7⅜	7⅜	7⅜	7⅜	0
21¾	17½	20½	19	10	do bankers' sh.	300	20½	*20½	20	20	— ½
2¾	.60	3½	2	N.P.	Colombia Syndicate	67,100	2⅛	2⅛	† 2	2½	— ⅛
15	8¼	15¼	11	N.P.	Creole Syndicate.	11,000	12	12⅜	†11	11½	— ½
12¾	5	7⅜	3	N.P.	Crown Central.	3,100	3¾	3¾	† 3	3¾	— ⅛
7	2	3¼	2	N.P.	Derby Oil & Ref.	300	2	2	2	2	0
27	10½	14⅞	13½	N.P.	do pfd.	.....	.....	.....	.....	.....	.....
6	1¾	7	4	N.P.	Gibson Oil.	32,300	4¾	5¼	† 4	5	+ ⅛
3¾	1⅜	2	.87	N.P.	Gilliland v.t.c.	400	.87	1	†.87	.87	—13
98½	63½	98¾	82⅛	$25	Gulf Oil Corp.	16,500	85¼	86¾	†82⅛	85⅝	+ ⅝
5⅞	2¼	3⅜	2	N.P.	Kirby Petroleum.	3,400	2½	2½	2½	2½	— ⅛
23¼	17⅜	25⅞	17½	N.P.	Lago Oil & Trans. A	164,500	19¾	23½	†17½	20⅛	0
11¾	4⅜	13	9	N.P.	Lago Petroleum.	11,500	10¼	11	† 9	11	+ ¾
13	6	12¼	9	N.P.	Leonard Oil & Dev.	34,100	10⅜	11	9	10⅜	— ⅛
25⅞	18	25¾	23¾	N.P.	Lion Oil Refining.	4,000	24	25⅛	24	24½	+ ½
4½	1¾	.....	.....	N.P.	Marland of Mexico.	.....	.....	.....	.....	.....	.....
5¾	.56	5½	3⅝	$10	Mexican-Panuco.	14,500	4¾	4¾	† 3⅝	4⅜	— ½
2	1	1¾	1⅝	1	Mountain & Gulf.	4,500	1⅝	1⅝	1⅝	1⅝	0
26¼	18⅜	26	23¾	10	Mountain Prod.	15,600	24½	24⅞	23¾	24⅞	— ½
6¾	3⅝	6¾	6	5	New Bradford.	8,600	6½	6½	6¼	6⅜	— ⅛
24¾	16¼	5	4	10	New England Fuel.	.....	.....	.....	.....	.....	.....
19⅜	6¼	17	11⅝	1	New Mex. & Ariz.	16,700	14	14⅜	†11⅝	12½	—1½
12½	8¼	17	11⅝	25	New York Oil.	500	12¾	13	12½	13	+ ⅛
37	14	36	34¼	25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
2¼	.90	2¼	1⅛	N.P.	Peer Oil Corp.	10,700	1¼	1¼	† 1⅛	1¼	— ⅛
28¼	16	22¼	19½	$10	Pennok Oil.	2,600	20⅜	20⅝	†19½	19½	—1¾
44½	16	21¼	14½	25	Red Bank Oil.	500	16	18¾	†14½	18¾	+2½
33½	19	24⅞	14½	N.P.	Reiter-Foster.	4,100	17½	18	15⅛	17¾	— ¼
9½	3½	7½	5⅞	N.P.	Ryan Consolidated.	1,600	6⅞	7¼	6⅛	6½	+ ⅛
9¼	6⅜	10	8⅞	$10	Salt Creek Cons.	2,800	9½	9½	† 8⅞	9⅛	— ½
35	24	36	29	10	Salt Creek Prod.	7,600	31⅛	32	†29	31½	+ ¾
3⅞	1	2	1⅜	5	Savoy Oil.	.....	.....	.....	.....	.....	.....
13¾	9	10	9	10	Tidal Osage.	.....	.....	.....	.....	.....	.....
10⅞	8	10	9	10	do non-voting.	.....	.....	.....	.....	.....	.....
4⅞	1¾	8	4¼	5	Venezuelan Pet.	6,900	7½	7½	5⅛	6¼	—1¼
.....	.....	29¾	24⅝	....	Warner-Quinlanw.i.	4,100	25⅜	27¼	†24⅝	27	+1
31¼	22⅛	27⅛	22	N.P.	Wilcox O. & G. new.	2,200	25⅜	25½	†22	25	— ½
7	3⅞	6	5¼	N.P.	Woodley Petroleum.	300	6	6	5¾	5¾	— ¼

Pittsburgh Stock Exchange

Transactions Week Ended Mar. 5

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Sales	First	High	Low	Last	Ch'ge
8¼	5¼	7	5¾	$10	Arkansas Nat. Gas.	2,290	6	6⅛	†5¾	6	0
73¼	69¼	.....	.....	N.P.	Columbia Gas.	.....	.....	.....	.....	.....	.....
18	14½	17	15	$10	Devonian Oil.	346	15½	15½	†15	15½	+ ¾
112¾	105⅛	114	112	$100	Duquesne Lt. 7s pfd.	105	113	113	†112	112	.....
95	90	.....	.....	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
.....	.....	10	7	....	HoustonGulfGas(w.i.)	600	8¼	8¼	†7	7⅜	—1⅝
55	32½	56½	51	25	Lone Star Gas.	2,920	52	54¼	†51	52¼	+ ¾
7	3¾	6½	6	....	do Rights.	.....	.....	.....	.....	.....	.....
37¼	31	36½	34½	25	Ohio Fuel Corp.	5,769	35	35½	†34½	35	0
34	26	34	31	25	Oklahoma Nat. Gas.	865	31½	31½	†31	31	— ⅛
8¾	5	5¾	4⅜	5	Pittsburgh O. & G.	35	4⅜	4⅜	†4⅜	4⅜	0
9⅝	6	10	8¾	10	Salt Creek Cons.	155	9	9	†8¾	8¾	— ⅛
13¾	8½	10	9	10	Tidal Osage.	35	9	9	9	9	0

Pittsburgh Curb Market

Transactions Week Ended Mar. 5

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Sales	First	High	Low	Last	Ch'ge
20	18½	.....	.....	....	Central Ky. Gas.	.....	.....	.....	.....	.....	.....
2½	.60	3⅜	2⅛	$ 5	Colombia Synd.	300	2½	2½	†2⅜	2⅜	.....
.60	.15	15	15	5	Duquesne Oil.	.....	.....	.....	.....	.....	.....
9	5½	.....	.....	10	Forest Oil.	.....	.....	.....	.....	.....	.....
92⅜	64	91½	90	25	Gulf Oil Corp.	.....	.....	.....	.....	.....	.....
.....	.....	10	6½	....	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
12½	3¼	12	9⅜	N.P.	Leonard Oil & Dvlp.	300	10	10½	10	10½	.....
2¾	1⅜	.....	.....	1	Oklahoma Eastern.	.....	.....	.....	.....	.....	.....
¾	⅜	.....	.....	....	Okla. Eastern rts.	.....	.....	.....	.....	.....	.....
1⅞	1⅞	.....	.....	....	Okla. Eastern ex-rts.	.....	.....	.....	.....	.....	.....
.47	.20	.20	.20	10	Omar O. & G.	.....	.....	.....	.....	.....	.....
27½	25	33	27	10	Plymouth Oil.	361	29	29¼	27½	29	0
7	3	4	3	5	States Oil.	100	3⅛	3⅛	3⅛	3⅛	.....
4	1⅞	3⅛	2⅛	$ 1	Texon Oil & Land.	6,165	2¾	2¾	†2⅛	2¾	0
11	9	9½	9¼	10	Tidal Osage.	.....	.....	.....	.....	.....	.....
.....	.....	42⅜	42	N.P.	Waverly Oil Wks. A	475	42	42	42	42	0

*New High ‡New Low xEx Dividend